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ABSTRACT

This paper examines the impact of the Latin American external debt on education. Results suggest that increases in debt levels in 19 Latin American countries have negatively affected education as a percentage of government expenditures. In some cases, this means that education expenditures are failing to keep up with growth of total government expenditures, rather than declining in absolute terms. Higher percentages of the education budget are going to recurrent expenditures. Among the countries examined, there is no uniform pattern of changes in budget percentages going to teacher salaries and scholarships. There are significant reductions in the percentage of current expenditures for teaching materials. Basic education may be less protected than higher education from the "quick fix" adjustment programs implemented to respond to the debt crisis. This is worrisome, given the uneven income distribution in Latin America. Reform of the adjustment phase will require a systemic approach to educational finance and educational management and reexamination of the linkages between education and productivity. (83 references) (MLH)

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# EDUCATIONAL AND STRUCTURAL ADJUSTMENT IN LATIN AMERICA

Fernando Reimers

Development Discussion Paper No. 314

October 1989

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## ABSTRACT

This paper examines the impact of the Latin American external debt on education. Specifically it explores whether the changes in the trends of educational expenditures are significantly related to the trends of the public external debt.

The increases in debt levels in Latin America are associated with decreases in levels of educational expenditures. Declines in the percentage of government expenditures for education are significantly associated with increases in debt in most countries, although in some cases this means that education expenditures fail to keep up with growth of total government expenditures, rather than decline in absolute terms.

The paper then reviews the changes in the structure of the education budgets associated with the adjustment phase.

This analysis suggests that higher percentages of the budget are going to recurrent expenditures. Among the countries examined there is no uniform pattern in the changes in the percentage going to teacher salaries and scholarships. There are significant reductions in the percentage of current expenditures for teaching materials.

The evidence examined suggests also that basic education may be less protected from the adjustment process than higher education. This is not surprising given the trends of educational development in Latin America in the last 20 years, but it is worrisome given the uneven income distribution structure of those societies.

A basic thesis of this paper is that the adjustment programs implemented to respond to the "debt crisis" conform a new scenario for educational planning and management. The paper discusses some of the areas of educational policy which require reform to respond effectively to the adjustment process. Another thesis of the paper is that reform in the adjustment phase will require a systemic approach to the areas of: educational finance, educational management and reviewing the links between education and productivity.


Fernando Reimers is an HIID Research Associate.

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# Education and Structural Adjustment in Latin America.

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## 1. Introduction.

The purpose of this paper is to examine the impact of the Latin American external debt on education. This study attempts to examine whether the changes in the trends of educational expenditures are significantly related to the trends of the public external debt. Examining the impact of the external debt on government educational expenditures may be of interest to understand the potential of the debt to constrain long term development, given the important role of educational investments for such long term development. Given also that the 'debt problem' is probably not going to be solved in the short run, the analysis of such impact may also stimulate the development of policy alternatives to maintain the contribution of education to development. The paper discusses some of the areas of educational policy which require reform to respond effectively to the adjustment process.

A basic thesis of this paper is that the adjustment programs implemented to respond to the 'debt crisis' conform a new scenario for educational planning and management. I contend that there are two ways the education system can respond to this new scenario: 1) quick-fix adjustment and 2) planned reform. I propose that of these two ways planned reform has a better chance to preserve efficiency and equity in the provision of education.

Quick-fix responses are the antithesis of planned change. Furthermore, they may lead to adjustments that are more responsive to the interests of the most vocal than to considerations about efficiency or equity. At a recent conference on the crisis of educational quality in Latin America I asked a provincial secretary of education to explain the criteria by which there had been drastic reductions in the percentage of government expenditures in primary levels and in teaching

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* This paper is based on my doctoral dissertation Trends in Educational Finance in Latin America. The Impact of the External Debt. I am indebted to the members of my thesis committee: Russell Davis, Noel McGinn and Donald Warwick for their helpful suggestions with the dissertation and to Don Snodgrass and Ernesto Cuadra for their comments to a draft of this paper. My thanks also to Joe Stern who helped me get this paper out. My biggest debt is with Eleonora Villegas-Reimers for innumerable discussions on this topic and for her suggestions to this and other related papers.

materials and scholarships; his answer was that such changes were unintentional and unplanned[1].

Drawing from the work of Hewton (1986) in England, I propose that the recognition of this new scenario of diminished government resources for education (related to a debt crisis which seems more chronic than critical), has to precede any attempts to reform educational policy. It is important for educational policy makers to realize how drastically the financial scenario has changed in order to impulse systemic reforms in education.

Analyzing the impact of reductions in education expenditures in England, Hewton (1986) advances the notion of 'cultures of choice', referring to the organizational climate in which educational policy decisions are made. He suggests that reductions in financial resources require moving from a 'crisis culture' (in which the sense of direction is lost) to a 'culture of cuts' (which attempts to control the decline associated with reduced levels of expenditures).

> "A cuts culture is not associated with termination...nor is it related to major axeing of parts of an organization...Rather, it is a culture which is linked to extended periods of marginal contraction. In some respects it might be likened to a crisis culture except that uncertainty is no longer accompanied by very short decision-time. Crises may still intrude into the cuts culture, yet, overall, there is time for reflection, review, evaluation and negotiation. The future may not look bright, but at lest there is the opportunity to prepare for it" (Hewton 1986,127).

Hewton proposes that the emergence of a cuts culture will proceed in a three-staged process of response in local bodies of educational decision-making: 1) defensiveness (and denial of the problem), 2) pragmatic adjustment (cut what you can) and 3) reform, where policy-makers realize that short-term adjustment has meant undesired sacrifices in equity or efficiency (Hewton 1986,128-143).

> "To summarize the main points relating to the emerging cuts culture, it seems that, with a growing certainty of uncertainty, authorities have the opportunity to plan for their contraction in a much more positive way than in the crisis culture. Their task, however, is a difficult one, and the culture faces conflict brought about by the opposing pulls of those seeking to defend the status quo and those

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[1] II Conferencia Internacional Crisis y Calidad de la Educacion. Universidad de Monterrey. Mexico. October 1989.

> seeking more radical reforms. In between, trying to smooth the path towards decline, are the pragmatists who themselves are torn between preserving and changing -but 'somebody has to do the job'. In one sense the cuts culture might seem to function more 'effectively' if the reformers were to gain greater power than the defenders. If this happens various tools of analysis will be used to re-define goals and procedures and to question long-established professional norms and standards.' (Hewton 1986,143).

The Latin American financial crisis has proven to be long enough to require moving from a 'crisis culture' to a culture of reforms in which the reduced levels of government spending will be part of the new scenario of educational planning and management. This paper attempts to make the case that this crisis has existed for most of this decade -which justifies beginning to see it more as a 'chronic' problem than as a 'critical' problem-, that it has had a disproportionate impact in public expenditures in education, and that it calls for systemic reform of the sector.

## 2. Debt and Education in Latin America.

Latin America is, tragically, the best of all places to test the hypothesis that debt servicing can squeeze educational development. On the one hand it is a region were education expanded vigorously in the 1960s and 1970s, on the other, it is the hardest hit area of the world by external debt.

In the 1950s education in Latin America began a process of remarkable quantitative expansion and development[2]. The last 30 years have been ones of optimistic goal setting, and of increased importance of the educational sector in the development agendas of Latin American governments. An outline of that history can be obtained by following the regional conferences of Ministers of Education.

In 1956, the first regional conference in Lima, Peru (which was called the Conference on Free and Compulsory Education) set the stage for the impressive quantitative expansion that would follow[3]. As a result of that meeting, UNESCO adopted in the same year the "Major Project on the Extension and Improvement of Primary Education in Latin America", to be completed in 1966.

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[2] This section is based on Avalos 1978; UNESCO 1976a, 1976b; and Blat 1981.

[3] In Latin America, the regional ministerial meetings provide policy frameworks that influence specific policies designed by each country.

The next regional conference (Santiago, Chile) in 1962, was a joint meeting of Ministers of Education and Finance which encouraged the idea that education was a necessary condition for economic development. The Santiago Conference set targets of universal primary education in several of the most advanced Latin American countries by 1965. One year later, however, at the Bogotá regional meeting, this target was postponed to 1975. The Buenos Aires conference, in 1966, reiterated the notion adopted in Santiago that education was an investment in economic development. The stimulus that educational systems received from these meetings was important, and all the countries in the Region made significant improvements. This was particularly evident at the 1971 regional conference, held in Venezuela. Between 1960 and 1970 the total in-school population in the Region grew at a yearly rate of 6.1% (UNESCO 1976a,21); this growth outpaced the growth of the school age population in that period. This quantitative expansion of educational systems would not have been possible without major improvements in educational finance. In addition to significant international assistance, national public expenditures in education in the Region increased noticeably. Educational expenditures in Latin America, as a percentage of Gross National Product, increased from 2.8% in 1960 (UNESCO 1976b,93) to 3.4% in 1976 (Blat 1981,70). It was against that background of quantitative development that the conference in Venezuela, and the next one in Mexico in 1979, set further targets for the improvement of qualitative aspects of educational systems.

In 1979 a look at the success of the recent past seemed to justify hopes and higher aspirations for the future. For example, the Mexico conference suggested increasing public educational expenditures toward a new goal of 7%-8% of Gross Domestic Product (GDP). The underlying logic of these new aspirations may have been that the economic progress which had helped finance the educational expansion of the past would continue. However, a rapid deterioration of the Latin American economies had already begun at the time of the 1979 conference. In fact, only three years after the Mexico regional meeting, Mexican officials suddenly announced their inability to meet their debt obligations. Although Mexico was not the only indebted country, as we will see, 1982 marks the beginning of the recognition of a "debt crisis" in Latin America.

Latin America is the most indebted region of the world. 11 of the 17 highly indebted countries in the world are in Latin America (World Bank 1988, Vol 1,xviii).

Table 1 summarizes the increases in debt levels in Latin America. We can observe that the level of debt servicing as a percentage of exports has increased substantially between 1970 and 1987, averaging 4% of growth every year from 1970 levels (unweighted average). Only Haiti and Panama have lower servicing

levels in 1987 than in 1970, all the other countries experienced increases in those levels (5% per year on average, if we exclude Haiti and Panama). The increases in debt levels are most significant after 1975.

The average (unweighted) annual growth in levels of debt servicing for all the countries of the region, increased from under 2% between 1970-75, to 5% between 1975-80, and to 6.5% between 1980-87.

The rationale to expect an impact of the external debt in educational finance stems from the adjustment programs undertaken as a response to balance of payments difficulties, structural adjustment involves reductions in government expenditures as a means to curbe domestic aggregate demand. Governments may implement adjustment programs voluntarily or under pressure from international financial institutions in order to receive more loans.

Table 1. Changes in levels of debt servicing as a percentage of exports in Latin America.

| | Debt Servicing as a percentage of exports | | | | Annual growth (%) in Debt Servicing as % exports | | | |
|---|---|---|---|---|---|---|---|---|
| Country | 1970 | 1975 | 1980 | 1987 | 70-75 | 75-80 | 80-87 | 70-87 |
| Argentina | 21.6 | 22.0 | 16.6 | 45.3 | 0.37 | -5.48 | 15.42 | 4.45 |
| Bolivia | 11.3 | 15.3 | 27.9 | 22.1 | 6.25 | 12.77 | -3.27 | 4.02 |
| Brazil | 12.5 | 17.9 | 34.6 | 26.7 | 7.45 | 14.09 | -3.64 | 4.57 |
| Chile | 19.2 | 27.2 | 21.9 | 21.1 | 7.21 | -4.24 | -0.53 | 0.56 |
| Colombia | 11.6 | 10.8 | 8.9 | 30.7 | -1.42 | -3.80 | 19.35 | 5.89 |
| Costa Rica | 10.0 | 10.7 | 16.8 | 12.1 | 1.36 | 9.44 | -4.58 | 1.13 |
| Dom. Rep. | 4.1 | 4.7 | 10.3 | 16.3[a] | 2.77 | 16.99 | 7.95 | 9.01 |
| Ecuador | 8.6 | 4.4 | 18.9 | 20.7 | -12.54 | 33.84 | 1.31 | 5.30 |
| El Salvador | 3.6 | 9.0 | 3.3 | 19.4 | 20.11 | -18.18 | 28.79 | 10.42 |
| Guatemala | 7.4 | 1.8 | 2.4 | 24.9 | -24.63 | 5.92 | 39.68 | 7.40 |
| Haiti | 16.7 | 4.6 | 4.9 | 5.1 | -22.73 | 1.27 | 0.57 | -6.74 |
| Honduras | 2.8 | 4.7 | 10.1 | 23.0 | 10.91 | 16.53 | 12.48 | 13.19 |
| Mexico | 23.6 | 24.9 | 32.1 | 30.1 | 1.08 | 5.21 | -0.91 | 1.44 |
| Nicaragua | 10.5 | 12.0 | 16.0 | 10.9[a] | 2.71 | 5.92 | -6.20 | 0.23 |
| Panama | 7.7 | 5.9 | 6.0 | 6.5 | -5.19 | 0.34 | 1.15 | -0.99 |
| Paraguay | 11.8 | 9.3 | 10.2 | 21.3 | -4.65 | 1.86 | 11.09 | 3.54 |
| Peru | 11.6 | 25.6 | 31.1 | 12.5 | 17.15 | 3.97 | -12.21 | 0.44 |
| Uruguay | 21.7 | 41.2 | 12.4 | 24.4 | 13.68 | -21.35 | 10.15 | 0.69 |
| Venezuela | 2.9 | 5.3 | 13.3 | 22.4 | 12.82 | 20.20 | 7.73 | 12.78 |

[a] These figures are for 1986.
Derived from: World Bank. World Debt Tables. 1988.

Once governments are faced with the fact that they have to cut their spending, the next question is what has to be cut and the proportion of cuts for each sector.

Although there is agreement on the need for systematic analysis of the effects of the debt on social spending (World Bank 1986a,20; de Vries 1986,66; Wionczek 1985,xi), few studies have examined this relationship empirically.

Lewin has developed a comprehensive theoretical model of the forces that influence educational expenditures; he suggests that debt and conditionality, as well as reduced international trade and foreign assistance, are among those forces that would reduce the ability of governments to finance education (Lewin 1986, 1987). From a conceptual analysis of those factors Lewin deduces seven hypothetical propositions regarding the impact of austerity: 1) "in periods of restraint it is education budgets that are likely to shoulder a substantial share of the burden of cuts", 2) "with stable or contracting budgets structural changes are likely to occur in their distribution" to the detriment of non-salary and capital expenditures, 3) "expenditure, at least in unit cost terms, at primary level will suffer more relative to secondary provision which in turn will suffer more relative to tertiary provision", 4) "formal provision is likely to be less vulnerable than pre-school, out of school or post-school non formal provision", 5) reductions in recurrent costs will result in reductions in quality, 6) the importance of cost-recovery will increase and 7) there will be increased dependence on foreign aid for innovation and curricular development (Lewin 1986,223-225). The analysis offered in support of these propositions is theoretically consistent and provides a basis for a range of options for planners to resist those pressures.

Hicks and Kubisch (1984) investigated the vulnerability of different sectors to cuts when total government expenditures were reduced in 32 countries. They concluded that defense and social spending were less vulnerable to reductions than spending on infrastructure and production (Hicks and Kubisch 1984,38).

UNICEF produced a series of reports on the impact of the world recession on children, with particular emphasis on health and limited evidence on education. The case studies presented in the UNICEF report found no evidence that the recession had increased the infant mortality rate in four Latin American countries: Brazil, Chile, Costa Rica and Cuba (UNICEF 1984,156). However, the case studies were conducted in 1982 and 1983, and the report itself suggests that there may be time lags mediating the impact of the new economic conditions and infant mortality rates.

Another study analyzed the social effects of the debt in Mexico, and concluded that education was one of the hardest-hit areas. In one single year, between 1982 and 1983, after Mexico declared its inability to meet debt obligations, educational expenditures fell from 5.5% to 3.9% of GDP and from 9.3% to 7.9% of the total government budget (Dieguez 1986,16). A similar

report for Costa Rica concluded that "During the crisis [of 1981-82] dropout rates increased and enrollment rates decreased." (Vedova 1986,7).

Psacharopoulos and Steier (1986) directly examined the hypothesis that high debt service payments result in reductions of public expenditures on long gestation social investments like education and health. Using a dataset of 125 countries in the period 1975-1985 this study regressed education, health and government investment on debt servicing as a percentage of government expenditure[4]. The authors conclude that in all regions there has been a decline in the investment of government expenditure, but that this reduction has been sharpest in Latin America where debt servicing is highest. In addition, they conclude that the reductions in education as a percentage of government expenditure in Latin America are related to the increase in government servicing of the debt (Psacharopoulos and Steier 1986,3).

In the context of testing the hypothesis that educational expenditures are a function of economic well-being, Tilak (1989) examined the effect of debt on the level of expenditures. Using regression analysis of cross-country data in a given year, he obtained a positive correlation between debt and education as a percentage of Gross National Product as well as between debt and education expenditures as a percentage of total government expenditures (Tilak 1989a,142). The same author found also a positive association between external debt and total expenditures in education in Sub-Saharan Africa (Tilak 1989b,10).

Several authors using case studies have documented a negative impact of high debt levels and adjustment programs in levels of government financing of education in the Gambia (Sarr 1989), Nigeria (Okacha 1989) and Yugoslavia (Georgeoff 1989).

Using data for the countries of traditional Latin America[5], another study examined the impact of debt levels in public educational finance (Reimers 1988, 1989e). Combining regression analysis of time series with several case studies this research concludes that the impact of debt on education is less than automatic. Of particular importance in this impact are the adjustment policies undertaken by many governments in the 1980s. This negative association between debt levels and educational expenditures is also observed in another study using cross-

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[4] The focus of the study was by region of the world, hence the data were grouped by region and year.

[5] By traditional Latin America we refer to the countries of the Region sharing historical and institutional heritage, namely the spanish speaking countries, plus Brazil and Haiti.

country and longitudinal evidence (Reimers 1989b).

In summary, the evidence regarding the impact of the debt on education seems both scanty and contradictory. Of the few existing studies some indicate that education declines as a priority of the government while debt rises, and other studies indicate that "social spending" (including education) is particularly protected. The reasons for the contradictory evidence may be the different approaches authors have used to aggregate data and to analyze them as well as the different measures of education and debt used.

The objective of this study is to examine the hypothesis that the levels of external indebtedness have contributed to the financial squeeze in education in Latin America. The paper further examines the changes in the structure of educational expenditures and discusses some policy implications of the new financial scenario for educational planning.

3. The impact of debt payments in educational expenditures.

I estimated the association between time series of three indicators of educational expenditures and of each of seven indicators of public debt in each of the countries of Latin America for which those series of indicators were available[6]. The indicators of educational expenditures were: Expenditures in Education of the Central Government in Constant figures of local currency at 1980 values[7] (CEDEXP), Expenditures in Education of the Central Government as a percentage of total central government expenditures (EDGOV), Expenditures in Education of the Central government as a percentage of total central government expenditures excluding government expenditures in debt servicing (EDGOVNET). The indicators of government debt were: government interest payments as a percentage of government expenditures (INTGOV) which includes payments of both external and domestic debt, total external debt outstanding and disbursed as a percentage of exports (DODXGS), total external debt outstanding and disbursed as a percentage of Gross National Product (DODGNP), total debt servicing as a percentage of exports (TDSEXP), total debt servicing as a percentage of Gross National Product (TDSGNP), interest payments as a percentage of Gross National Product (INTGNP) and interest payments as a percentage of exports (INTXGS). The series covered the period between 1970 and 1988, or

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[6] The sources for these indicators where the IMF Government Finance Statistics Yearbook, and the World Bank Debt Tables.

[7] We used the Consumer Price Index (CPI) to deflate current figures because the greater part of the educational budget goes to salaries, which are properly deflated using this index of inflation as it affects individual households.

whichever data were available in each country within that period.

The association between each pair of debt and education series was estimated using an Ordinary Least Squares regression if there was not significant autocorrelation between the series (0.05 level). If the observed autocorrelation was significant, on the other hand, the Cochrane Orcutt procedure was used to estimate the coefficient of determination and slope of the association. In addition bivariate plots of those series were examined to detect non-linear patterns. The yearly trends of each of the indicators were also examined[8]. The following section summarizes the findings of this analysis[9].

Argentina. All the associations of the various debt indicators and educational expenditures as a percentage of government expenditures (EDGOV and EDGOVNET) are negative and statistically significant or borderline significant[10]. On the other hand, the associations with Constant government expenditures are not significant. Notice in appendix B that the trend in constant education expenditures is very erratic, while debt levels increase steadily.

Bolivia. Most of the observed associations are not statistically significant. The bivariate plots suggest that the association between debt and education is non-linear; the relationship in the more recent years is distinctly outside the previous pattern.

Brazil. Like in Argentina, the observed associations are negative and statistically significant for educational expenditures as a percentage of government expenditures. They are not significant for total educational expenditures, a clear change in structure is observed in the association between the various indicators of debt ant total educational expenditures,

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[8] The results of the test of autocorrelation, OLS and Cochrane Orcutt methods of all the associations examined at this level (Appendix A), as well as the yearly plots of the variables examined (Appendix B) can be obtained from the author at: HIID. One Eliot Street. Cambridge, MA 02138. USA.

[9] The countries of Cuba, Colombia and Haiti, of traditional Latin America, were not included in this part of the analysis because Series of more than a few datapoints in which to run the regressions were not available.

[10] Unless otherwise noted, all references to significance in this paper imply a significance level (alpha) of 0.05, that is the probability of rejecting the null hypothesis (that debt and education are not related) 5 times in a 100 when the null hypothesis is in fact true.

this association is positive up to a point, and then flattens out or becomes negative. We will discuss this non-linear pattern further later on as it characterizes the association in many countries between debt and total educational expenditures.

Chile. Only a few of the associations with education as a percentage of government (EDGOV and EDGOVNET) are negative and statistically significant.

Costa Rica. Most of the associations are negative and statistically significant with education as a percentage of government expenditures. We notice a change in structure in the associations with constant educational expenditures.

Dominican Republic. This is the first country in which we observe associations which are positive and statistically significant. This constitutes negative evidence against the thesis of this paper. There is a marked shift in the trend of educational expenditures in the early 1980s, from increasing to decreasing levels, this results in a non-linear association with debt levels.

Ecuador. Like the Dominican Republic the observed associations in this country are positive and statistically significant. Here, too, we can notice a change in the trend of expenditures in the 1980s and the dual structure in the association with debt discussed before.

El Salvador. Most of the observed associations are negative and statistically significant for all the indicators of educational expenditures.

Guatemala. The associations between the series in this country are also positive and statistically significant. Notice, however, that these series are shorter than the other series discussed so far in that they cover only the period between 1972 and 1979.

Honduras. Although this is another short series (pre 1980) the associations observed here with educational expenditures as a percentage of government expenditures are negative and statistically significant. The associations with constant educational expenditures, on the other hand, are positive.

Mexico. Most of the associations between the series in this country are negative and statistically significant. There is also a change in structure in the associations involving constant educational expenditures.

Nicaragua. This series, too, are pre 1980, yet most of the observed associations with education as a percentage of government expenditures are negative and statistically

significant. There is no impact in constant educational expenditures.

Panama. Few of the associations examined in this country are statistically significant. Notice in table 1, however, that this country has the lowest debt levels of external debt in the region.

Paraguay. Like in Panama, none of the observed associations are statistically significant, although here a change in the structure of the association is observed.

Peru. Even though the series cover just until 1982, most of the associations are negative and statistically significant.

Uruguay. Most of the associations between the series are negative and statistically significant.

Venezuela. Most of the observed associations are positive and statistically significant. This becomes another point of evidence against the thesis of this paper. Notice, however, the change in the structure of the series of total educational expenditures in the eighties, which leads to the same dual structure in the association with debt discussed earlier.

This evidence supports the conclusion that debt levels have a negative impact on education as a percentage of government expenditures. Many of the countries with significant negative associations between debt and relative levels of education, however, show positive or no association between debt and constant educational expenditures. The examination of the bivariate plots of these series suggests that this is due to a change in the structure of the association between debt and education in or around 1980; before that point the association between debt and education is positive, hence flattening out or becoming negative. Figure 1 illustrates the presence of this change in structure for the association between debt servicing as a percentage of exports and constant government expenditures in education in Brazil. Notice how educational expenditures grow from 45 to 100 million of Cruzados while debt servicing remains below 20% of exports, but the growth of expenditures stabilizes once debt levels go to higher levels. The change in structure is even sharper in Costa Rica for the same indicators. We can see in Figure 2 that the decline in educational expenditures begins only once debt servicing exceeds 20% of exports.

Keeping in mind the limitation of these linear estimates of the association, especially for the cases discussed earlier, table 2 summarizes the associations between the various indicators of debt and of educational expenditures which were statistically significant.

Figure 1. Brazil. Impact of Debt Servicing on Education Expenditures (expenditures in education in Millions of Cruzados at 1980 prices).

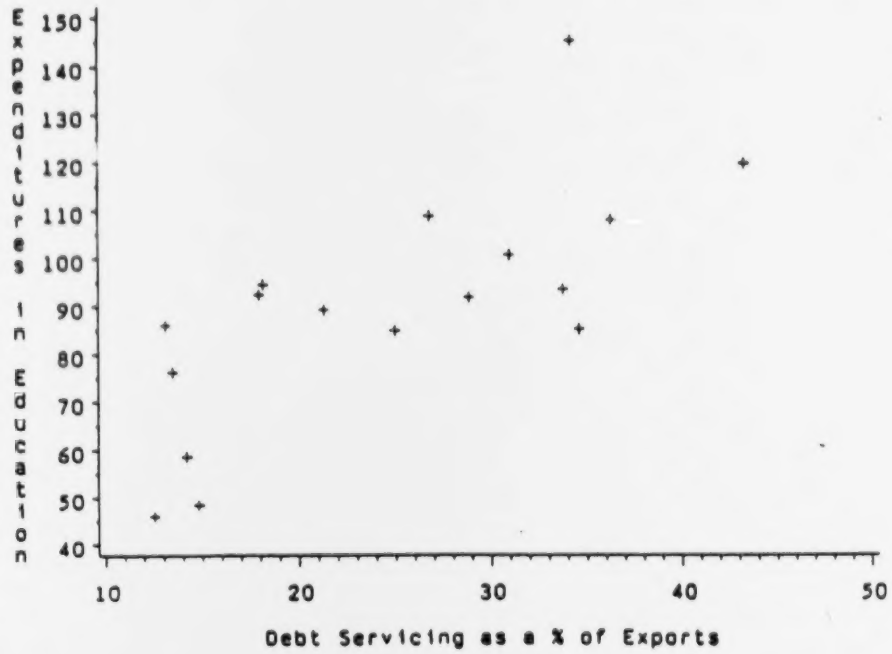


Figure 2. Costa Rica. Impact of Debt Servicing on Education Expenditures (expenditures in education in Millions of Colones at 1980 prices).

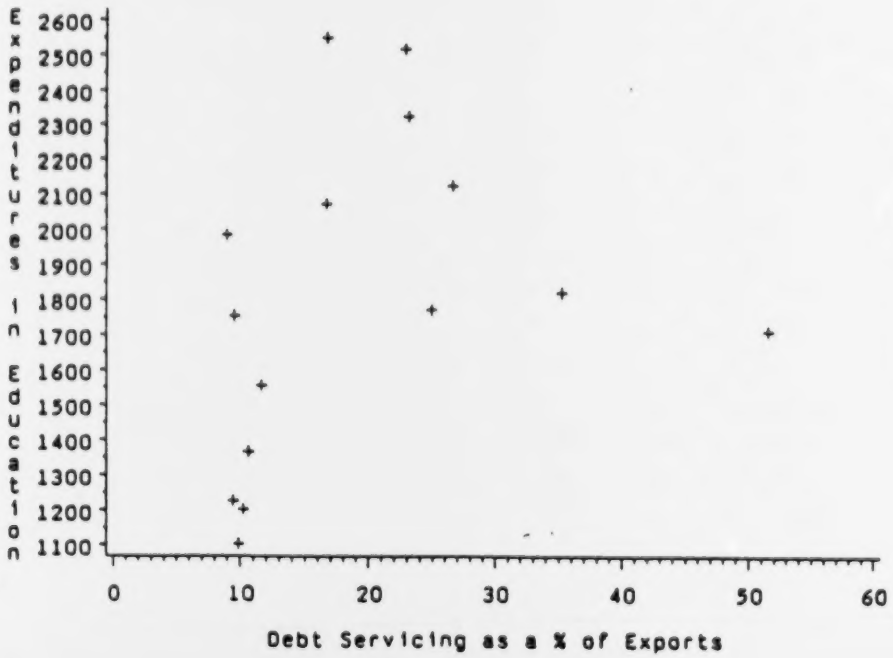

Table 2. Associations between debt and education series that are statistically significant (level 0.05). (Derived from Appendix A.)

| Education Expenditures of the Central Government | | | | | |
|---|---|---|---|---|---|
| In constant figures | | As % of Total Govmt. | | As % of Net Govmt. | |
| **======Impact of Total Debt as a Percentage of GNP (DODGNP)======** | | | | | |
| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
| Brazil | Honduras | Argentina | Venezuela | Argentina | Venezuela |
| Costa Rica | | Brazil | | Chile | |
| El Salvador | | Chile | | El Salvador | |
| Mexico | | El Salvador | | Honduras | |
| Peru | | Honduras | | Nicaragua | |
| Uruguay | | Mexico | | | |
| | | Nicaragua | | | |
| | | Peru | | | |
| **======Impact of Total Debt as a Percentage of XGS (DODXGS)=====** | | | | | |
| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
| El Salvador | Brazil | Argentina | Dom. Rep. | Argentina | Dom. Rep. |
| Uruguay | Ecuador | Brazil | Venezuela | Costa Rica | Venezuela |
| | Honduras | Chile | | Honduras | |
| | | Costa Rica | | Nicaragua | |
| | | El Salvador | | | |
| | | Honduras | | | |
| | | Nicaragua | | | |
| **==Impact of Interest Payments as a Percentage of GNP (INTGNP)==** | | | | | |
| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
| El Salvador | Ecuador | Argentina | Venezuela | Argentina | Venezuela |
| Peru | Honduras | Brazil | | Brazil | |
| Uruguay | | Costa Rica | | Costa Rica | |
| | | El Salvador | | El Salvador | |
| | | Honduras | | Honduras | |
| | | Mexico | | Mexico | |
| | | Panama | | Peru | |
| | | Peru | | | |

Table 2. (Continued...)

=Impact of Interest Payments as a Percentage of Exports(INTXGS)=

| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
|---|---|---|---|---|---|
| El Salvador | Brazil | Argentina | Dom. Rep. | Argentina | Dom. Rep. |
| Uruguay | Ecuador | Brazil | Venezuela | Brazil | Venezuela |
| | Honduras | Costa Rica | | Chile | |
| | | Honduras | | Costa Rica | |
| | | El Salvador | | El Salvador | |
| | | | | Honduras | |

====Impact of Interest Payments as a % of Government(INTGOV)===

| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
|---|---|---|---|---|---|
| Chile | Dom. Rep. | Argentina | Dom. Rep. | Costa Rica | Dom. Rep. |
| El Salvador | | Costa Rica | Guatemala | El Salvador | Guatemala |
| Honduras | | El Salvador | Honduras | Peru | Honduras |
| Mexico | | Mexico | Venezuela | | Venezuela |
| Peru | | Nicaragua | | | |
| Uruguay | | Peru | | | |

========Impact of Debt Servicing as a % of GNP (TDSGNP)========

| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
|---|---|---|---|---|---|
| Peru | Bolivia | Argentina | Dom. Rep. | Argentina | Dom. Rep. |
| Uruguay | Ecuador | Brazil | Venezuela | Brazil | Venezuela |
| | Honduras | Costa Rica | | Costa Rica | |
| | | Honduras | | Honduras | |
| | | Peru | | Peru | |
| | | Uruguay | | Uruguay | |

=====Impact of Debt Servicing as a % of Exports (TDSXGS)======

| CEDEXP Negative | CEDEXP Positive | EDGOV Negative | EDGOV Positive | EDGOVNET Negative | EDGOVNET Positive |
|---|---|---|---|---|---|
| El Salvador | Bolivia | Brazil | Dom. Rep. | Brazil | Chile |
| Uruguay | Brazil | Costa Rica | Guatemala | Costa Rica | Dom. Rep. |
| | Dom. Rep. | Honduras | Venezuela | Honduras | Guatemala |
| | Ecuador | Uruguay | | Uruguay | Venezuela |
| | Honduras | | | | |

We can observe in table 2 that the evidence supporting a negative impact of debt levels on education outweights the evidence supporting a positive association between them. Of the 17 countries examined, there are eight countries in which at least one debt indicator has a statistically significant negative impact on constant educational expenditures. The five countries in which at least one of the debt indicators is positively related to education expenditures are evidence supporting the notion that there is no uniform association between debt and education in the period 1970-86. It is really after 1980 that the relationship between debt and education, until then positive, flattens out, thus the effect of the debt is on the rate of growth of educational expenditures, rather than on the absolute levels of expenditures themselves. Notice that of these countries, Bolivia, Brazil, Dominican Republic and Ecuador have non-linear patterns as discussed earlier[11]. The data for Honduras, on the other hand, cover only until 1979.

The evidence of negative impact of debt is stronger, as we had already pointed out, on education as a percentage of total government expenditures. There are eleven countries in which there is at least one debt indicator with a significant negative association with education as a percentage of central government expenditures. There are only four countries in which at least one of the debt indicators is positively related to education as a percentage of government expenditures. Of those Guatemala and Honduras refer to series before 1980, which is consistent with our hypothesis that the impact of the debt was sharper beginning in 1980. Dominican Republic and Venezuela remain as two solid cases against our hypothesis.

Similar results are observed for the association between debt and education as a percentage of government expenditures, net of interest payments.

The magnitude of the impact of debt payments on educational expenditures is indicated by the slopes of the association in Appendix A. As an illustration of this impact let's take the coefficients of the association between interest payments as a percentage of government expenditures and education as a percentage of government expenditures (net of interests)

| | Slope |
|---|---|
| Costa Rica | -3.05 |
| El Salvador | -0.68 |
| Peru | -0.46 |

In Costa Rica, on average, for every increase of one percent

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[11] The observed linear estimate is positive because it is responsive to the longest segment of what is really a two-part association, one positive which then flattens out.

in interest payments as a percentage of government expenditures, education diminishes by 3% as a percentage of all the other expenditures. In El Salvador, every increase of 1% of interest payments as a percentage of government expenditures, educational expenditures diminish by 0.68% as a percentage of all the other expenditures. In Peru, every increase of 1% in interest payments diminishes education expenditures by 0.46% of all other expenditures.

4. Reductions in levels of educational expenditures.

Having analyzed the impact of the debt payments, we will now examine the changes in educational expenditures. Table 3 presents figures of constant educational expenditures for three points in time between the early 1970s and mid 1980s in national currency units.

We can observe that the annual rate of growth of constant expenditures in education is substantially higher before 1980 than after this period. In all the countries examined constant educational expenditures grew, on average, by 6.99% per year between 1970 and 1979 (unweighted average). After 1980, however, that growth became negative, -0.01 on average. This reinforces our analysis of the impact of the debt on total educational expenditures; the impact of the debt was to slow down the rate of growth of educational expenditures, and even though there are no net reductions in many countries, in most of them the expansion of educational expenditures flattens out during the period of highest debt levels.

Table 4 summarizes the changes in educational expenditures as a percentage of total central government expenditures. The annual rate of growth is negative for most countries (except Paraguay and Venezuela), averaging -2.72%, and reaching up to -7.32% per year in the case of Bolivia. A less dramatic change is observed in education expenditures as a percentage of government expenditures net of interest payments, even so the annual rates of growth are negative in most countries, averaging -0.02% per year.

This summary of the changes in educational expenditures adds light to our earlier discussion of the impact of debt on education. All countries experienced a slow-down of the expansion of educational expenditures (which led to net declines of expenditures only in some of the cases) and a decline (except in the case of Venezuela) in the levels of education as a percentage of government expenditures.

Table 3. Changes in Educational Expenditures of the Central Government (Constant 1980 in national currency units) before and after 1980.

| Country | Year | Educational Expenditures Pre 79 | 1979 | Post 80 | Annual Growth (%) Pre79 | Post 80 |
|---|---|---|---|---|---|---|
| Argentina | 1976-86 | 330.00 | 415.66 | 376.49 | 8.00 | -0.01 |
| Bolivia | 1972-84 | 2.35 | 5.30 | 5.51 | 12.32 | 0.01 |
| Brazil | 1970-86 | 46.00 | 107.86 | 145.34 | 9.93 | 0.04 |
| Chile | 1972-86 | 10.00 | 44.08 | 38.75 | 23.60 | -0.02 |
| Costa Rica | 1972-86 | 1103.63 | 2516.00 | 2122.24 | 12.49 | -0.02 |
| Dom. Republic | 1973-86 | 122.25 | 154.49 | 123.01 | 3.98 | -0.03 |
| Ecuador | 1973-85 | 5339.10 | 7913.00 | 12142.60 | 6.78 | 0.07 |
| El Salvador | 1970-87 | 183.47 | 292.60 | 149.77 | 5.32 | -0.08 |
| Guatemala | 1972-79 | 99.00 | 109.33 | 109.34 | 1.43 | |
| Honduras | 1972-79 | 114.55 | 182.52 | 182.53 | 6.88 | |
| Mexico | 1972-87 | 46.65 | 119.21 | 81.94 | 14.34 | -0.05 |
| Nicaragua | 1972-80 | 565.06 | 498.65 | 734.00 | -1.77 | |
| Panama | 1973-86 | 137.39 | 163.60 | 225.85 | 2.95 | 0.05 |
| Paraguay | 1972-86 | 4486.57 | 7003.67 | 6544.72 | 6.57 | -0.01 |
| Peru | 1972-82 | 152.93 | 107.17 | 169.90 | -4.95 | |
| Uruguay | 1972-86 | 1705.88 | 1784.31 | 1412.04 | 0.64 | -0.03 |
| Venezuela | 1970-86 | 4082.80 | 9863.90 | 10908.30 | 10.30 | 0.01 |

Derived from: IMF. Government Finance Statistics Yearbook. (several issues).

The third column (Pre 79) contains the expenditures in the beginning of the series indicated in the second column (Year), the fourth column (1979) contains the expenditures in 1979, the fifth column (Post 80) contains the expenditures in the end of the series indicated in the second column. The sixth column (Annual Growth Pre 79) is the average annual percentual growth of expenditures between the beginning of the series and 1979. The last column (Annual Growth Post 80) is the average annual percentual growth of expenditures between 1979 and the end of the series.
The figures are given in the following units:
Argentina: Thousands of Australes; Bolivia: Thousands of Bolivianos; Brazil: Millions of Cruzados; Chile: Billions of Pesos; Costa Rica: Millions of Colones; Dominican Republic: Millions of Pesos; Ecuador: Millions of Sucres; El Salvador: Millions of Colones; Guatemala: Millions of Quetzales; Honduras: Millions of Lempiras; Mexico: Billions of Pesos; Nicaragua: Thousands of Cordobas; Panama: Millions of Balboas; Paraguay: Millions of Guaranies; Peru: Millions of Intis; Uruguay: Millions of New Pesos; Venezuela: Millions of Bolivares.

Table 4. Changes in Educational Expenditures as a percentage of Total Expenditures of the Central Government.

| Country | Year | Education as % of Govmt. Expenditures | | Annual Growth % |
|---|---|---|---|---|
| Argentina | 1970-86 | 10.19 | 6.03 | -3.23 |
| Bolivia | 1972-84 | 30.45 | 12.23 | -7.32 |
| Brazil | 1970-86 | 6.72 | 3.33 | -4.29 |
| Chile | 1972-86 | 14.28 | 12.53 | -0.93 |
| Costa Rica | 1972-86 | 28.29 | 16.22 | -3.90 |
| Dom. Republic | 1973-85 | 14.24 | 12.84 | -0.86 |
| Ecuador | 1973-85 | 27.48 | 24.45 | -0.97 |
| El Salvador | 1970-87 | 22.29 | 17.08 | -1.55 |
| Guatemala | 1972-79 | 19.43 | 12.56 | -6.04 |
| Honduras | 1972-79 | 22.34 | 17.80 | -3.19 |
| Mexico | 1972-88 | 16.56 | 7.43 | -4.89 |
| Nicaragua | 1970-80 | 17.60 | 11.59 | -4.09 |
| Panama | 1973-86 | 20.69 | 15.90 | -2.01 |
| Paraguay | 1972-86 | 12.12 | 12.23 | 0.06 |
| Peru | 1972-82 | 22.68 | 18.47 | -2.03 |
| Uruguay | 1972-86 | 9.47 | 7.11 | -2.03 |
| Venezuela | 1970-86 | 16.49 | 19.55 | 1.07 |

Source: Government Finance Statistics Yearbook, IMF. Several issues. (Annual growth derived as percentage compound growth).

Table 5. Changes in Educational Expenditures as a percentage of Total Expenditures of the Central Government net of Interest Payments (EDGOVNET).

| Country | Year | Education as % of Net Govmt. Expendt. | | Annual Growth |
|---|---|---|---|---|
| Argentina | 1970-86 | 10.39 | 6.54 | -0.03 |
| Bolivia | 1972-84 | 31.33 | 12.51 | -0.07 |
| Brazil | 1970-86 | 7.19 | 5.90 | -0.01 |
| Chile | 1972-86 | 11.11 | 13.28 | 0.01 |
| Costa Rica | 1973-86 | 31.30 | 17.82 | -0.04 |
| Dom. Republic | 1973-85 | 14.40 | 13.48 | -0.01 |
| El Salvador | 1971-87 | 25.05 | 18.66 | -0.02 |
| Guatemala | 1972-79 | 20.49 | 13.24 | -0.06 |
| Honduras | 1972-76 | 23.55 | 21.48 | -0.02 |
| Mexico | 1972-88 | 18.01 | 16.76 | -0.00 |
| Nicaragua | 1970-80 | 17.96 | 12.56 | -0.04 |
| Panama | 1973-86 | 22.34 | 20.34 | -0.01 |
| Paraguay | 1972-86 | 12.49 | 13.12 | 0.00 |
| Peru | 1972-82 | 23.81 | 22.05 | -0.01 |
| Uruguay | 1972-86 | 9.70 | 7.74 | -0.02 |
| Venezuela | 1970-86 | 16.77 | 23.36 | 0.02 |

Source: Government Finance Statistics Yearbook, IMF. Several issues. (Annual growth derived as percentage compound growth).

These reductions are also observed with national figures of educational expenditures. Table 6 summarizes the changes in total educational expenditures as a percentage of government expenditures at the national level. We can notice in table 6 that for most of the countries there are reductions, averaging over 1% per year for the region (unweighted). The magnitude of the change is similar to that observed for central figures of expenditures for Argentina, Ecuador, Panama and Paraguay. The reductions are smaller at the national level than at the central level for Bolivia, Costa Rica, Guatemala, Honduras, Nicaragua and Peru. On the other hand, those reductions are larger at the national level than at the central level for Chile, Dominican Republic, El Salvador, Uruguay and Venezuela. Only Brazil and Mexico show increases in expenditures at the national level while showing decreases at the central level.

Table 6. Changes in levels of educational expenditures as a percentage of total government expenditures.

| Country | Period | Education as % of Govmt. Expenditures | | Annual % Growth |
|---|---|---|---|---|
| Argentina | 1970-86 | 14.40 | 7.50 | -4.00 |
| Bolivia | 1970-83 | 28.40 | 21.30 | -2.19 |
| Brazil | 1970-85 | 10.60 | 17.20 | 3.28 |
| Chile | 1970-85 | 22.00 | 15.30 | -2.39 |
| Colombia | 1970-86 | 13.60 | 24.70 | 3.80 |
| Costa Rica | 1970-86 | 31.80 | 20.40 | -2.74 |
| Dom. Rep. | 1970-86 | 15.90 | 10.00 | -2.86 |
| Ecuador | 1970-85 | 23.20 | 20.60 | -0.79 |
| El Salvador | 1970-82 | 27.60 | 8.50 | -9.35 |
| Guatemala | 1970-84 | 17.50 | 12.40 | -2.43 |
| Haiti | 1976-85 | 7.90 | 16.50 | 5.03 |
| Honduras | 1970-86 | 18.40 | 16.40 | -0.72 |
| Mexico | 1970-85 | 8.50 | 16.20 | 4.39 |
| Nicaragua | 1970-86 | 18.10 | 12.60 | -2.24 |
| Panama | 1970-86 | 22.10 | 14.30 | -2.68 |
| Paraguay | 1970-85 | 15.30 | 16.70 | 0.59 |
| Peru | 1970-86 | 18.80 | 15.70 | -1.12 |
| Uruguay | 1970-86 | 26.10 | 14.50 | -3.61 |
| Venezuela | 1970-85 | 22.90 | 21.30 | -0.48 |

Source: Statistical Yearbook, UNESCO. Several issues.

Table 7 summarizes the changes in the level of national educational expenditures relative to the Gross National Product. We can notice that there are reductions in 12 of the 19 countries and in one of them there is no growth. Given that most of these countries experienced reductions in the rate of growth of their GNP the decline of educational expenditures as a percentage of GNP indicates a larger decline in the growth of absolute expenditures.

Table 7. Changes in levels of educational expenditures as a percentage of Gross National Product.

| Country | Period | Education as % of G.N.P. | | Annual % Growth |
|---|---|---|---|---|
| Argentina | 1970-86 | 1.90 | 1.80 | -0.34 |
| Bolivia | 1970-84 | 3.30 | 0.50 | -12.61 |
| Brazil | 1970-85 | 2.90 | 3.30 | 0.87 |
| Chile | 1970-85 | 5.10 | 4.50 | -0.83 |
| Colombia | 1970-86 | 1.90 | 2.90 | 2.68 |
| Costa Rica | 1970-86 | 5.20 | 5.20 | 0.00 |
| Dom. Rep. | 1970-86 | 2.90 | 1.60 | -3.65 |
| Ecuador | 1970-86 | 4.20 | 3.40 | -1.31 |
| El Salvador | 1970-84 | 2.90 | 3.00 | 0.24 |
| Guatemala | 1970-85 | 2.00 | 1.80 | -0.70 |
| Haiti | 1970-86 | 1.30 | 1.20 | -0.50 |
| Honduras | 1970-86 | 3.10 | 5.00 | 3.03 |
| Mexico | 1970-86 | 2.40 | 2.10 | -0.83 |
| Nicaragua | 1970-86 | 2.30 | 6.60 | 6.81 |
| Panama | 1970-86 | 5.50 | 5.00 | -0.59 |
| Paraguay | 1970-85 | 2.20 | 1.50 | -2.52 |
| Peru | 1970-86 | 3.40 | 1.70 | -4.24 |
| Uruguay | 1970-86 | 3.60 | 3.10 | -0.93 |
| Venezuela | 1970-85 | 4.70 | 6.80 | 2.49 |

Source: Statistical Yearbook, UNESCO. Several issues.

5. Changes in the type of educational expenditures.

This sections analyzes the changes that occur in the distribution of expenditures.

Table 8 shows that there are increases in the proportion of current educational expenditures. We can see that such growth is more noticeable in recent years than between 1970-75 or even 1975-80. The number of countries where the percentage of current expenditures increases in the period goes from 7 in 1970-75 and 1975-80 to 14 in 1980-86. The unweighted average yearly growth goes from negative growth between 1970-75 and 1975-80 (meaning a higher percentage in capital expenditures) to a positive of almost 1% of the base, which is a significant amount considering the high levels of these figures, a yearly increase of less than one percent from a base of 95% going to current expenditures, means an increase to 99.6% over 5 years (as the case of Chile illustrates). This suggests that the more recent years of the adjustment phase have seen a lesser percentage of development expenditures in education.

Table 8. Current Educational Expenditures as a Percentage of Total Expenditures.

| Country | Percentage into Current Expenditures 1970 | 1975 | 1980 | 1986 | Annual Growth (%) in % Current Expenditures 70-86 | 70-75 | 75-80 | 80-86 |
|---|---|---|---|---|---|---|---|---|
| Argentina | 90.7 | 93.8 | 84.5 | 87.7 | -0.21 | 0.84 | -2.07 | 0.62 |
| Bolivia | 99.7 | 99.9 | 96 | 99.6[b] | -0.01 | 0.05 | -0.79 | 0.92 |
| Chile | 88.8 | 94.4 | 94.9 | 99.6[a] | 0.77 | 1.54 | 0.11 | 0.97 |
| Colombia | 78.6 | 85.4 | 93.3 | 93.4 | 1.08 | 2.10 | 1.79 | 0.02 |
| Costa Rica | 96.1 | 93.5 | 91.3 | 91.4 | -0.31 | -0.68 | -0.48 | 0.02 |
| Cuba | | | 89.5 | 93.9[a] | | | | 0.96 |
| Dom. Rep. | 93.1 | 82.4 | 75.4[d] | 96.9[b] | 0.29 | -3.01 | -2.20 | 6.47 |
| Ecuador | 78.4 | | 94 | 90.7 | 0.91 | | | -0.59 |
| El Salvador | 93.7 | 91.7 | 94.1 | 87.3[b] | -0.50 | -0.54 | 0.52 | -1.86 |
| Guatemala | 88.3 | 91.7 | 95.5[c] | 97.8[b] | 0.73 | 0.95 | 0.68 | 0.60 |
| Haiti | | 88.7 | 80.1 | 99.8[a] | | | -2.02 | 4.50 |
| Honduras | 95.3 | | 91 | 97.7 | 0.16 | | | 1.19 |
| Mexico | 89.9 | 89.5 | 91.7 | 92.7 | 0.19 | -0.11 | 0.49 | 0.18 |
| Nicaragua | 98.7 | 79.8 | 87.5 | 99.3 | 0.04 | -5.18 | 1.86 | 2.13 |
| Panama | 92.3 | 93.6 | 93.7 | 97.6 | 0.35 | 0.35 | 0.02 | 0.68 |
| Paraguay | 88.8 | | | 81.4[a] | -0.58 | | | |
| Peru | 96.7 | 96.4 | 94.4 | 96.3[a] | -0.03 | -0.08 | -0.42 | 0.40 |
| Uruguay | | | 94.7 | 94.6 | | | | -0.02 |
| Venezuela | 94.3 | 95.8 | 95.1 | 95.9[b] | 0.12 | 0.40 | -0.15 | 0.21 |

[a]: Figures are for 1985
[b]: Figures are for 1984
[c]: Figures are for 1981
[d]: Figures are for 1976

Source: Statistical Yearbook, Unesco. Several Issues

Having seen that a higher percentage of funds goes to recurrent expenditures, the next question is expenditures in what? The following tables explore the changes in the distribution of recurrent expenditures among the three principal categories of spending: salaries, teaching materials and scholarships. Table 9 summarizes those changes in the countries for which the data are available. There is no uniform pattern in the changes in the percentage of current expenditures for Teacher Salaries, between 1980 and 1986; while in some countries there is growth, in others there is decline in the levels of this figure. The picture is more consistent for what happens to the percentage of expenditures for Teaching Materials. In all countries but Ecuador and Venezuela there are significant reductions, to the point that by 1986 most countries spend less than 1% of their current budget in teaching materials; the rate of decline of this indicator averages about 10% per year. There are again variations with regard to the portion of the current budget for

scholarships. Of the eight countries for which we have data half show reductions and the other half show increases in this item. The levels of variability are restricted since scholarships is a very small portion of the current budget already in 1980.

Table 9. Changes in the distribution of Current Expenditures.

| Country | Teacher Salaries 1980 | 1986 | Yearly % Growth | Materials 1980 | 1986 | % Gr. | Scholarships 1980 | 1986 | % Gr. |
|---|---|---|---|---|---|---|---|---|---|
| Argentina | | 57.1 | | 7.9 | 0.5 | -36.87 | 5 | 1.7 | |
| Bolivia | 75.7 | 93.3 | 11.02 | | | | 0.2 | 0.1 | |
| Brazil | | | | | | | | | |
| Chile | 76.8 | | | 5.1 | | | | | |
| Colombia | | | | | | | | | |
| Costa Rica | 50.2 | 53.5 | 1.07 | | | | | | |
| Cuba | 38.8 | 50.5[a] | 5.41 | 6.6 | 0.8[a] | -34.43 | 2.5 | 1[a] | -16.74 |
| Dom. Rep. | 62.2 | 62.9 | 0.19 | | | | 2 | 0.9 | -12.46 |
| Ecuador | | 62.3 | | 0.8 | 2.6 | 21.71 | 0.2 | 0 | |
| Guatemala | 69.1 | 70.4[b] | 0.47 | 0.5 | 0.3[b] | -11.99 | 0.6 | 0.7[b] | 3.93 |
| Haiti | 66.9 | 52.2[a] | -4.84 | 2.2 | 1.3[a] | -9.99 | 1.2 | 1.9[a] | 9.63 |
| Honduras | 71.1 | 60.2[c] | -7.98 | 2.6 | 1.3[c] | -29.29 | 1.6 | 1.3[c] | -9.86 |
| Mexico | 56.6 | 68.7 | 3.28 | | 0.9 | | 0.2 | 0.2 | 0.00 |
| Nicaragua | 69.7 | 52.3 | -4.67 | 2.2 | 2.2 | 0.00 | 0.7 | 3.3 | 29.49 |
| Panama | 65.3 | 61.6 | -0.97 | 1.8 | 0.9[a] | -12.94 | 3.8 | | |
| Peru | 59.4 | 55.2[a] | -1.46 | 0.9 | 0.3[a] | -19.73 | | | |
| Uruguay | 56.9 | 44.7 | -3.94 | 0.9 | 0.3 | -16.73 | | | |
| Venezuela | 60.7 | 60[b] | -0.29 | 1 | 4.5[b] | 45.65 | 7.4 | 4.5[b] | -11.69 |
| | | | -0.21 | | | -9.51 | | | -0.96 |

[a]: Figures are for 1985
[b]: Figures are for 1984
[c]: Figures are for 1982

Source: Statistical Yearbook, UNESCO. 1988.

6. Changes in current educational expenditures by level.

Table 10 to 12 present the percentage of current expenditures by level of education. We can notice that there is no uniform pattern for all countries of the region. There are more countries where the relative levels of expenditures in primary education decline since 1970 than countries where those levels increase; the number of countries where primary education declines increases in more recent years. Reciprocally, there are more countries where the relative levels of expenditures in higher education increase since 1970 than countries in which those levels decrease. Between 1970-86 eleven countries increased the percentage of expenditures for higher education, while this

figure decreases in only five of them. Comparing the annual rates of growth of primary versus higher education in 1980-86 for each country, we see that in ten countries primary education suffered more than higher education, while there were only five countries in which higher education suffered more than primary education.

Table 10. Percentage of expenditures for Primary Education.
Percentage Expenditure Annual Growth in % Exp.

| | 1970 | 1975 | 1980 | 1986 | 70-75 | 75-80 | 80-86 | 70-86 |
|---|---|---|---|---|---|---|---|---|
| Argentina | 30.4 | 27 | 40.1 | 37.7[b] | -2.34 | 8.23 | -1.53 | 1.55 |
| Bolivia | 62.1 | 62.5 | 58.9 | 71.9[c] | 0.13 | -1.18 | 10.49 | 1.23 |
| Brazil | 7.5 | 62.7 | 44.8 | 45.9[a] | 52.91 | -6.50 | 0.49 | 12.84 |
| Chile | | 34.9 | 44.6 | 51[a] | | | 2.72 | |
| Colombia | 36.5 | | 44.4 | 39.2[a] | | | -2.46 | 0.48 |
| Costa Rica | 51.2 | 37.2 | 28 | 37.8 | -6.19 | -5.52 | 5.13 | -1.88 |
| Cuba | | | 24.4 | 20.7[a] | | | -3.24 | |
| Dom. Rep. | 41.1 | | 36.8 | 44.4 | | | 3.18 | 0.48 |
| Ecuador | 45.9 | | 20.6 | 48.5 | | | 15.34 | 0.34 |
| El Salvador | 57.9 | 57.5 | 61.9 | | -0.14 | 1.49 | | |
| Guatemala | 55.2 | 51.3 | | | -1.45 | | | |
| Haiti | 65.1 | 63 | 59.3 | 51[a] | -0.65 | -1.20 | -2.97 | -1.61 |
| Honduras | 64.2 | | 61.9 | 48.5 | | | -3.98 | -1.74 |
| Mexico | 47.7 | 42.9 | 39.7 | 27.4 | -2.10 | -1.54 | -5.99 | -3.41 |
| Nicaragua | 57.9 | 55.1 | 44.7 | 37.8 | -0.99 | -4.10 | -2.76 | -2.63 |
| Panama | 38.9 | 39.1 | 46.3 | 40.7 | 0.10 | 3.44 | -2.13 | 0.28 |
| Paraguay | 64.8 | | | 36.6[a] | | | | -3.74 |
| Peru | 39.8 | 40.7 | 45.1 | 35.6[a] | 0.45 | 2.07 | -4.62 | -0.74 |
| Uruguay | 45.1 | | 48.4 | 36.5 | | | -4.59 | -1.31 |
| Venezuela | 38.3 | 22.1 | 21.1 | 28.2[b] | -10.41 | -0.92 | 7.52 | -2.16 |

[a]: Figures are for 1985
[b]: Figures are for 1984
[c]: Figures are for 1982

Source: Statistical Yearbook, UNESCO. Several years.

Table 11. Percentage of expenditures for Secondary Education.

| | Percentage Expenditure | | | | Annual Growth in % Exp. | | | |
|---|---|---|---|---|---|---|---|---|
| | 1970 | 1975 | 1980 | 1986 | 70-75 | 75-80 | 80-86 | 70-86 |
| Argentina | 30.3 | 30.5 | 25.6 | 27.4[b] | 0.13 | -3.44 | 1.71 | -0.72 |
| Bolivia | 12.8 | 7.3 | 11.4 | 13[c] | -10.62 | 9.32 | 6.79 | 0.13 |
| Brazil | 11.1 | | 7.1 | 7.7[a] | | | 1.64 | -2.41 |
| Chile | | 13.5 | 18 | 19.5[a] | | | 1.61 | |
| Colombia | 16.9 | | 27 | 30.8[a] | | | 2.67 | 4.08 |
| Costa Rica | 18.9 | 22.4 | 21.5 | 21.6 | 3.46 | -0.82 | 0.08 | 0.84 |
| Cuba | | | 40.8 | 42[a] | | | 0.58 | |
| Dom. Rep. | 18.3 | | 22.9 | 18.4 | | | -3.58 | 0.03 |
| Ecuador | 41 | | 20.6 | 33.6 | | | 8.50 | -1.24 |
| El Salvador | 11.8 | 6.6 | 6.2 | | -10.97 | -1.24 | | |
| Guatemala | 16.9 | 15.5 | | | -1.71 | | | |
| Haiti | 17.8 | 17.5 | 20.4 | 18.1[a] | -0.34 | 3.11 | -2.36 | 0.11 |
| Honduras | 15.4 | | 17.9 | 17.1 | | | -0.76 | 0.66 |
| Mexico | 27.2 | 31.1 | 18.8 | 16.2 | 2.72 | -9.58 | -2.45 | -3.19 |
| Nicaragua | 17.6 | 22.4 | 25.1 | 18.3 | 4.94 | 2.30 | -5.13 | 0.24 |
| Panama | 18.7 | 23.5 | 22 | 25.3 | 4.68 | -1.31 | 2.36 | 1.91 |
| Paraguay | 17.1 | | | 29.7[a] | | | | 3.75 |
| Peru | 20.8 | 20.8 | 19.9 | 20.5[a] | 0.00 | -0.88 | 0.60 | -0.10 |
| Uruguay | 30.4 | | 33.2 | 27.8 | | | -2.92 | -0.56 |
| Venezuela | 20.6 | 18.4 | 15 | 6.5[b] | -2.23 | -4.00 | -18.87 | -7.91 |

[a]: Figures are for 1985
[b]: Figures are for 1984
[c]: Figures are for 1982

Source: Statistical Yearbook, UNESCO. Several years.

Table 12. Percentage of expenditures for Higher Education.
Percentage Expenditure Annual Growth in % Exp.

| | 1970 | 1975 | 1980 | 1986 | 70-75 | 75-80 | 80-86 | 70-86 |
|---|---|---|---|---|---|---|---|---|
| Argentina | 21 | 30.2 | 22.7 | 19.2[b] | 7.54 | -5.55 | -4.10 | -0.64 |
| Bolivia | 10.9 | 15 | 17.1 | 3.2[c] | 6.59 | 2.66 | -56.74 | -9.71 |
| Brazil | 59.3 | | 18.9 | 19.6[a] | | | 0.73 | -7.11 |
| Chile | | 25.2 | 33.2 | 20.3[a] | | | -9.37 | |
| Colombia | 23.9 | | 24.1 | 22.2[a] | | | -1.63 | -0.49 |
| Costa Rica | 10.5 | 24.4 | 26.1 | 39.7 | 18.37 | 1.36 | 7.24 | 8.67 |
| Cuba | | | 6.9 | 12.9[a] | | | 13.33 | |
| Dom. Rep. | 20.7 | | 23.9 | 19.7 | | | -3.17 | -0.31 |
| Ecuador | 9.9 | 15.6 | | 15.2 | | | | 2.72 |
| El Salvador | 21.4 | 23.7 | 14.2 | | 2.06 | -9.74 | | |
| Guatemala | 13.1 | 19.9 | | | 8.72 | | | |
| Haiti | 9.1 | 11.4 | 9.6 | 10.8[a] | 4.61 | -3.38 | 2.38 | 1.15 |
| Honduras | 12.2 | | 19.3 | 20.7 | | | 1.17 | 3.36 |
| Mexico | 10.4 | 12.6 | 26.5 | 31.8 | 3.91 | 16.03 | 3.09 | 7.24 |
| Nicaragua | 10 | 16.5 | 10.5 | 21.2 | 10.53 | -8.64 | 12.42 | 4.81 |
| Panama | 10.8 | 12.6 | 13.4 | 21.6 | 3.13 | 1.24 | 8.28 | 4.43 |
| Paraguay | 16.5 | | | 23.8[a] | | | | 2.47 |
| Peru | 1.9 | 1.8 | 3.1 | 2.7[a] | -1.08 | 11.49 | -2.73 | 2.37 |
| Uruguay | 19 | | 16.1 | 24.2 | | | 7.03 | 1.52 |
| Venezuela | 25.5 | 37 | 39.2 | 43.4[b] | 7.73 | 1.16 | 2.58 | 3.87 |

[a]: Figures are for 1985
[b]: Figures are for 1984
[c]: Figures are for 1982

Source: Statistical Yearbook, UNESCO. Several years.

## 7. Conclusions.

This study found support for the hypothesis that the priority given education by Latin American governments has diminished during the current economic crisis, which we have discussed as the "debt crisis." It is important to keep in mind that debt levels in the 1980s turned out to be very high, not only in absolute terms, but primarily relative to the export earnings of Latin America. Also the "crisis" was the result not only of the relative debt levels themselves, but of the interaction between those levels and an international financial scenario that reduced the supply and increased the conditionality of additional credit. In this sense, the "impact of the debt crisis" is really shorthand for a more complex set of issues involving structural and short-term circumstances that limit the ability of Latin America to service its debt out of its own resources.

The increases in debt levels in Latin America are associated with decreases in levels of educational expenditures. Declines in the percentage of government expenditures for education are significantly associated with increases in debt in most countries, although in some cases this means that education expenditures fail to keep up with growth of total government expenditures, rather than decline in absolute terms.

Of particular importance in this association between external debt and education is the role of IMF conditionality in the 1980s. This is supported by a related study in which the socio-political dynamics of the adjustment are examined in six countries (Reimers 1988, 1989e). This conditionality, along with the climate of credit markets in the 1980s, with private creditors demanding an IMF "seal of approval" of the country's adjustment policies before supplying any additional credit, is at the heart of the process by which debt was found to influence education.

In most countries the "impact of the debt" on education is, then, a phenomenon of the 1980s.

The type of adjustment policies implemented in the 1980s in many countries produced a "threshold" in the relationship between debt and educational expenditures; that threshold differentiates a change in the structure of the relationship, resulting in the negative impact of further increases in debt on the rate of growth of educational expenditures in the 1980s.

Before that turning point in the 1980s, on the other hand, in many countries debt did not have a negative impact on education, and in some cases debt and education were positively related. This is consistent with the notion that overall government expenditures expanded, financed by foreign debt.

Credit-led development reduced the need for governments to make allocational choices between sectors or groups in the society; yet the limits on the ability to continue financing government deficits through credit put pressure on the governments to choose between sectors. In this sense it is important to highlight that in facing IMF pressures to balance fiscal deficits, the ultimate choices of which sectors should be cut are choices of the governments.

The debt and the IMF stabilization requirements may have changed the political rules by which Latin American governments balance the interests of different groups. Wiarda and Kline have described the Latin American system as essentially accomodationist and cooptive of new groups:

> "In order to provide more pieces of pie for the newer groups, without depriving any of the older groups of their share, the pie must be steadily enlarged. During the 1930s, 1940s, 1950s, and early 1960s, precisely the heyday of the system here described, economic growth occurred at steady if seldom spectacular rates. With their economies expanding the Latin American systems could afford to give more benefits to labor, to peasants, to all groups in the system. The model of the political process described here, implying gradual assimilation of new groups, greater benefits, and rising living standards, was predicated on continued steady growth rates and hence more and more funds to buy off revolutionary challengers. But what if, as at present, the Latin American nations should face a situation where the pie would no longer be an expanding one but a stagnant or, in the case of some nations, a contracting one? Then how long could the political model outlined here --a relatively peaceful, stable, consensual, and accommodative one-- be expected to last? These are the questions the Latin American nations must now face up to" (Wiarda and Kline 1985,111-112).

A study of the effects of public expenditures in Latin America on poverty concludes that although the impressive expansion of expenditures before the debt crisis benefited the poor, the primary beneficiaries were the middle classes (Pfefferman 1987,14). A decade of experience suggests also that adjustment will not be a short-term process and therefore its implications on the most vulnerable groups require attention of policy makers:

> "It has become clear that the poverty aspects of adjustment are not simply a short-term problem. Adjustment programs have taken longer and proved far more arduous than originally expected [...] adjustment programs must be designed to protect and assist the poor [...] Constrained public social expenditures should be redirected from the better off to the poor" (Zuckerman 1989,20).

The immediate implication of this impact of the debt on education is a slowdown in the development of education in each country. Given the continued population growth in Latin America, and the fact that the quantitative expansion of the last 20 years had a qualitative trade off, the implication is the same: if all other things remain the same (ceteris paribus) the external debt has "frozen" the ability of the educational system to continue expanding the supply of education, in quantitative or qualitative terms.

The impact of the debt crisis on government educational expenditures operates at two levels: one is direct by reducing availability of foreign currency for the educational system; the other is indirect, through the adjustment process which results in reduced real educational budgets.

The direct impact of the adjustment on the educational inputs which are purchased with foreign currency should not be underestimated. Foreign currency is used to purchase very specialized inputs for the delivery of education. They can range from advice by international consultants to specialized equipment, training, and journals, or they can provide the resources for key members of the educational bureaucracy to maintain their contact with international networks[12]. Since these inputs are often the least visible part of an education delivery system, it may seem that their absence will not have significant effects; yet their effects can be just as important as those resulting from restrictions placed on other more visible inputs. An example is science laboratories at higher levels virtually paralyzed due to lack of material or equipment. Or libraries may have to cancel their subscriptions to international journals because the cost of foreign currency is beyond their budget allocations. Educational researchers or policy makers may have, by necessity, to cut their professional contacts with colleagues in other parts of the world because they can no longer participate in institutional exchanges, attend conferences or even read what is published elsewhere.

The mechanics of the adjustment, however, are mostly through educational budgets failing to keep up with the inflation rate. Several studies have shown that one of the destabilizing correlates of debt in Latin America is hyperinflation (Dornbusch 1987, Mallon 1988, Sachs 1986). As a result of inflation real educational expenditures decrease, while nominal educational expenditures increase. In the short run current levels of education supply need not be affected to the extent that there are no layoffs; but the impact may soon be felt in the form of

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[12] For an account of the importance of international networks for educational policy see Psacharopoulos (1980).

limits on new hirings and in the quality of education that teacher salaries of reduced purchasing power will buy[13]. For example, data from Costa Rica show that the salaries for every primary teacher increased in real terms at an annual rate of 10% between 1975-80 and decreased at an annual rate of 7.99% between 1980-86 (Sanguinetti 1988,18). Even if teachers of the same quality continue to be attracted by the reduced salaries (because of lack of more attractive options due to the recession), their need to supplement earnings with additional jobs may limit the quality of their teaching. In a review of the policy implications of the IEA studies, Husén concludes that time is crucial to promote learning, including teacher preparation of lessons as one of such time-related variables (Husén 1987,40). Another impact of the adjustment analyzed in this paper are reductions in capital investments in education and in the 'soft' portions of the education budgets, that is, those not protected by contractual obligations with teacher unions. The analysis of the change in the structure of educational expenditures suggests that higher percentages of the budget are going to recurrent expenditures. Among the countries examined there is no uniform pattern in the changes in the percentage going to teacher salaries and scholarships. There are significant reductions in the percentage of current expenditures for teaching materials.

The evidence examined seems to suggest that basic education may be less protected from the adjustment process than higher education. This is not surprising given the trends of educational development in Latin America in the last 20 years, but it is worrisome given the uneven income distribution structure of those societies.

8. The need of systemic reform in educational planning and management.

The current Latin American debt crisis has proven to present important constraints to the development of education. Given that the prospect for the debt crisis is not significant recovery in the short run, it is likely that these constraints will continue or increase their influence on education. This situation poses several paradoxes or bottlenecks for the development of Latin America. Unless policy changes are made, reductions in education might be one of the costs that the countries will pay for their public external debt. Recent experience in the countries examined

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[13] Lewin (1986) has suggested three mechanisms by which reductions in recurrent costs could affect quality. First, the decline of teacher salaries in real terms, which would influence morale and skills of those attracted to the profession. Second, an increase in the hiring of young and temporary teachers. Third, an increase in pupil-teacher ratios, reducing the demand for teachers (Lewin 1986, 225).

suggests that this priority can be reduced. These reductions would not facilitate the development of the skilled human resource base needed for the economic development that would free the region from the debt burden. In terms of reductions of internal gaps, government educational reductions are likely to have more impact on those people that would need more, not less, government assistance in order to be able to afford education (namely those at the bottom of the income distribution). But whether the governments choose to cut back education as a price for their foreign debt is not an inescapable policy option. The new constraints may stimulate new ways of thinking about and managing educational development. What is important is that governments continue to recognize the high priority of education, vis-a-vis other sectors of government spending, as a long-term investment in development. Even though this discussion leads beyond the sphere of the empirical analysis of this study. The following recommendations are intended to stimulate discussion about the changes that may be necessary to solve the above mentioned paradoxes and bottlenecks and to maintain the levels of investment in education that will preserve long-term economic, social and political development.

These recommendations are understood to configure a dynamic system, so that policy changes in each of the following areas will interact with the other areas. Coombs and Hallak have emphasized the importance of this systemic view in designing changes to cope with reduced government finance for education:

> "To obtain a full and accurate picture of the reality they are concerned with, educational cost analysts must view an educational system as a system, that is, as a dynamic, organic whole composed of many interdependent parts (subsystems). They must also be constantly aware that any significant change in one part of the system, for example, a change in the proportions of its inputs or the intensity of their use, or a change in its technology, organization, or management, is likely to have substantial repercussions on other parts of the system, and almost certainly on its future costs and efficiency. By the same token, if any important component of the system is missing, the performance of the system as a whole is bound to suffer" (Coombs and Hallak 1987,6).

A major area of policy options in the short run lies outside the sphere of education, belonging in the domains of macro-economic and political choices. To the extent the Latin American countries manage to alleviate the debt crisis directly (e.g. by increasing their export earnings, rescheduling the debt in more favorable terms or negotiating effective debt reductions) this will diminish the constraints on the education sector. Given the experience of this decade, however, it is unlikely that government expenditures will increase significantly. An analysis

of the prospects of the debt for the international economic relations of Latin America concludes:

> "Latin American experience since the Mexican moratorium of August 1982 does not inspire much optimism" (Mallon 1987,1).

Hence planners and managers of education will have to take direct steps to respond to the crisis in order to maintain and increase the level of efficiency of the educational system under the current constraints. Those steps refer to policy initiatives in three domains of the educational system: inputs, management and outputs.

A set of policy responses to the debt crisis would try to maintain the level of financial inputs to the education system so that the output in terms of productivity of the labor force is maintained. Another set of options would readjust the mechanisms by which those inputs contribute to economic development so that the same or increased productivity can be obtained with reduced inputs. Two areas of actions to accomplish this include: 1) better management, and 2) redefinition of outputs in terms of programs and levels that address more directly the needs of the economy. We will discuss briefly some of the issues and options pertinent to each of these three policy domains: educational inputs, educational management and educational outputs.

The propositions that follow stem from developments in the field of education independent of the debt crisis. That is, while they are not options specifically tied to the debt, the debt crisis provides the timing and the sense of urgency that creates the need for change in the educational system, making these propositions attractive policy options. The framework within which these options have been developed is one that considers education a crucial component of long-term development, both in terms of its potential to contribute to productivity (efficiency) and to social and political development (equity). These propositions are also develop for the specific context of education in Latin America, and may not be applicable to other regions of the world (i.e. Africa), facing similar financial constraints but different with different features in their education system, labor markets, governments and society. The most recent IDB report on the economic and social progress in Latin America summarizes the educational scenario as follows:

> "Despite an impressive increase in primary school enrollment, illiteracy is still high among an important segment of the population in several countries. The adult literacy campaigns launched in almost all of them have had varying results. Also, although in most of the countries almost all school-age children go to elementary school...most of them do not complete that level. The quantitative increase in elementary school enrollment has

brought problems of educational quality. In Latin America a high percentage of the schools are incomplete, and repeat and drop-out rates are high. In addition to that, teacher training at the elementary and secondary levels is still inadequate." (Inter American Development Bank 1989,57).

8.1. Policies to influence educational inputs: Readjusting educational finance.

The issues of finance include who should be educated and for what programs and levels, how will the funds be administered and who should pay (Levin 1985). The first two points are addressed later in the sections on educational management and outputs; we will address here the sources of financing which refer to the question of who should pay to compensate for the observed negative impact of the debt.

The question of who should pay has implications of efficiency and equity. These implications are particularly important in societies where resources are so visibly limited that allocations to education require tradeoffs with other sectors, and allocations to each level of education imply tradeoffs with other levels. The question is how can additional resources be made available to redress the impact of the debt, while optimizing efficiency and equity. Three sources of finance will be examined: 1) the government, 2) the direct beneficiaries of education, and 3) private profit-making and non-profit organizations.

The government is an obvious source of finance since there are educational benefits beyond what individuals receive directly (externalities). To the extent those externalities match intended objectives of the government it is clear that the government should finance education.

It is relatively clear that those who benefit directly from education should bear some cost in return for those benefits. Students and their families are hence a source of finance of the education they receive. As we will see this analysis needs to address differences in family income in order to serve equity goals.

Finally private organizations, both for-profit and non-profit, can benefit by the provision of certain types of education to certain groups in the society if that provision meets their own institutional objectives. For example, industries may benefit from the additional productivity of a labor force receiving certain forms of training, and churches or other social groups may be satisfied by the provision of literacy to marginalized groups. Hence private organizations are another source of finance of that education whose provision they endorse.

What policies can mobilize additional resources from each of these three sources of finance?

Increased government efforts.

The pressures for fiscal balance may develop a "culture of cuts" both at the level of the national cabinet as well as within the Ministry of Education.

> "A 'culture of cuts' will normally tend to take a short-term view and look for immediate savings, devaluing the long term because of the uncertainties involved; it will be conservative towards change and seek to minimize cost within the existing structure of provision to the point where this ceases to be viable; it may then encourage radical consideration of provision to transfer costs away from its own budget; it will value economy over improved access and equitable distribution of services; it may support the development of a "siege mentality" where the focus is on eking out existing resources rather than generating new ones from outside its immediate institutional environment" (Lewin 1987, 92-93).

Although governments facing resource constraints could be tempted to justify spending less on education on ideological grounds, this is an inadequate response to the crisis. Given other effects of the debt in the economy, reductions in financial inputs to education will mean losses in efficiency and equity, . hence this is not the time for the State to reduce its responsibility for education.

Assuming all education is a form of investment, less State intervention may be granted if the private sector would finance education. However, the economic recession has also affected the households, so that it is unrealistic to expect more private contributions even if the State cuts back. Given the negative incentives at the household level to send children to school, what is needed is more State intervention, not less, simply to maintain the current levels of educational efficiency. This is certainly a paradox --that the State contribution is needed more when it can afford it the least; but the need for that role should not be secondary to the apparent ability of the State to fulfill this responsibility. What is needed is an exploration of alternative options to continue carrying out, in spite of the crisis, the main responsibility of the State for the development of education.

The paradox of less government effort in circumstances where households can afford less effort is compounded at some income levels and may not apply to other levels. Disaggregating the analysis by income level may help find solutions to this finance dilemma. Not all families have reached the levels of poverty that

make them unable to finance their children's education. What may be necessary, for the sake of equity and balanced development, are redistributive measures that will break what is likely to develop as a vicious cycle of poverty in the absence of government intervention[14]. Those redistributive measures could be taken both within the education sector and at a more general level. Within the education sector they mean charging user fees to those who can afford them, and then using those resources to finance educational expansion for those least able to afford it. User fees at higher levels to finance expansion of education (in quality and quantity) at lower levels (to reach marginalized groups) would be a progressive way to redress the current imbalances in educational finance. This change would need to be complemented by loans to university students from less favored social backgrounds (which may have a certain grant component if recovery is less than 100% of the present value of the loan). Additional compensatory mechanisms could include partial loan forgiveness for university graduates who directly participated in the expansion projects at the basic levels or in other redistributive programs (either after graduation or in their final years in college). At a more general level they mean additional taxes specifically earmarked for educational services. These options will be discussed later on.

In the area of government finance the option seems to be to maintain or increase the priority of education vis-a-vis other sectors. An emphasis on long-term development in assigning sectoral allocations may counterbalance the pressures of a "culture of cuts." A shift from sectoral allocation to program and project allocation would facilitate the use of evaluation and rational planning allocation models to assess the developmental impact of different types of investments.

The existing evidence documenting the contribution of education to individual and national development may help to build a rational case for the need for education, but at the cabinet level concerns over day-to-day political realities may outweigh academic analysis of long-term development[15].

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[14] The mechanics of this vicious cycle of poverty are simple. The poor become poorer because the recession has influenced them disproportionately (fewer jobs in the industrial sector, fewer government services available, reductions in real wages), and have little hope of lifting their children out of poverty through education since they need their children's labor to subsist.

[15] A study of the education budget process in Mexico observed that information about equity, efficacy or relevance of education plays little role in allocations to education. Political criteria and bureaucratic politics have a larger impact in determining allocations (McGinn et al. 1983,260).

The assessment of political realities should take note, however, of whether the supply of education is meeting social demand at all levels and whether the balance of power among different interest groups creates inequities that do not correspond to the political agenda of the government.

The options available to the central government include monitoring the impact of the adjustment process on education, particularly beyond the finance level onto process and outcome levels. That information could assist the government in the policy dialogue with different interest groups in order to generate support for education which could make sacrifices in other sectors more acceptable. The information could also make changes in the patterns of allocations by level more acceptable and facilitate implementation of actions to increase private contributions to education.

This monitoring effort could be done in conjunction with international agencies in order to contribute to the understanding of this dimension of the debt problem in international fora. The developmental rationale of how the IMF adjustment programs interact with government policy choices must be examined. Monitoring the impact of adjustment on education may be particularly suited to special commissions of international organizations such as the IDB, UNESCO, the World Bank, USAID and others, since that process may be "undoing" some of the development of the last 25 years to which those organizations have contributed[16].

The government could also consider seeking foreign assistance directly for education, particularly as a means to provide for some of the crucial inputs directly purchased with foreign exchange discussed earlier. Given the economic constraints now facing traditional donors it is unlikely that aid will increase substantially; in fact it may decrease as a whole. Hence, from the perspective of donors, it is important that international assistance becomes more selective in order to have critical impact. One option is to target the poorer countries which could not otherwise produce the resources for education. A second option is to maximize the developmental potential of international aid.

Two conditions are very important for this contribution to be developmental. The first is that foreign resources should not

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[16] To my knowledge of those, the World Bank has already commissioned several studies to examine the impact of the debt crisis in several Latin American crisis. Unfortunately those belong in the category of 'For Official Use Only' documents, with limited impact in the development discussion arena.

substitute for but rather supplement what the country can do itself. Even though the definition of what can be achieved by the country itself leaves room for interpretation, there are mechanisms to increase the likelihood that the aid will be supplemental and not substitutional (e.g. matching grants, grants with provisions for maintenance of level of effort). The second condition is that this type of aid should have no extra-educational conditions attached to it. This type of assistance should be negotiated with the direct input of educational decision-makers who would be responsible to administer it, and should hence be totally in those decision-makers' areas of expertise. Educational aid with political strings, or as part of assistance packages with stabilization strings beyond the sphere of competence of the minister of education, is probably a bad idea, since those strings cannot be directly assessed as costs to be weighed against the potential benefits the aid would bring. The implications of these considerations for governments considering whether to solicit assistance is that this option should only be considered once other options for national finance have been exhausted. Still, there may be countries where the potential of national effort is so limited that borrowing abroad or asking for foreign grants may be the only option to maintain the required level of effort in education.

Private finance by direct beneficiaries.

A second domain for input policy initiatives is to increase the financing of education by its direct beneficiaries. Students and families already bear indirect costs of education (the value of their time) and in some cases direct costs (uniforms, materials, tuitions and contributions of various kinds to schools). The question is how to increase the level of private effort while preserving efficiency and, especially, equity. It is important to design these policies with sensitivity to the fact that the crisis is likely to have hit some social sectors harder, making them unable to maintain, let alone expand, previous levels of private contribution. For instance, for the very poor who may have previously made the effort to send one or more children to school for some years, the opportunity cost of sending a child to school may have increased if overall income of the household has decreased; hence these social sectors would need additional incentives to maintain their previous level of effort. This means that policies to increase private contributions should be combined with analysis of changes in household income by social sector and studies of the income elasticity of demand for schooling. A progressive example is the school lunch program implemented by the Brazilian government.

Two policy options are cost recovery by level and development of private schools (Schiefelbein 1986b). Cost recovery schemes could be implemented by introducing users' charges or by using students' loans. The principal focus of

attention should be on the levels where private returns exceed social returns the most, namely the higher levels. Students' fees for higher education, complemented by sound loan schemes and scholarships for students from deprived groups seem a rational option to increase private financing (Schiefelbein 1986a). It is crucial that cost recovery at any level be implemented, insuring that provision of education will not have a class bias. This means insuring that students from all social groups will continue to have access to education at all levels; preserving or increasing equality of opportunity should mean improving the quality of basic education for the socially disadvantaged, as well as implementing extensive scholarship programs at all levels. McMahon (1989) has developed a formula for introducing university fees with means testing in Latin America.

We have already discussed the political constraints to raising tuition for university students, but the government could seek broad support for the policy by explaining to the general public the rationale for the policy (Schiefelbein 1986b,34). In addition, the support of the university community and of the basic education levels could be sought by explaining to them such a rationale, and involving them in the design of alternatives that meet the desired objectives of efficiency and equity. Experience with student loans in Latin America suggests that recovery rates have been low. New schemes could build on existing experiences to extend and improve this mechanism of finance (Schiefelbein 1986b, 49). The importance of using means testing systems when cost-recovery schemes are introduced cannot be overemphasized since otherwise equity would suffer. This is consistent with the thesis of this paper that any area of policy reform should be approached with a systemic analytic framework. There is evidence in Latin America that quick-fix approaches to cost-recovery can easily loose sight of this systemic view:

> "Chile did raise [university] tuitions in the late 1970s while drastically reducing the subsidies to the universities...thereby raising the amount of cost recovery to 25%..But Chile failed to introduce a means testing system, and provide tuition and fee waivers on a more targeted basis to students from low income families, so by 1985 enrollment fell by 20,000 students and most of these students from lower income families were driven out." (McMahon 1989,26).

Private education seems to be contracting in Latin America, probably due to the fact that the Catholic Church (about three quarters of private schools in Latin America are sponsored by the Church) has shifted emphasis from education to pastoral activities (Schiefelbein 1986b, 34-42). An option to increase efficiency and equity would be to provide public subsidies to certain private schools with lower unit costs or ability to reach marginalized groups, such as the Fe y Alegría schools in the

Andean countries, given that "the magnitude of the private educational activity in the lower socioeconomic groups depends on the amount and conditions of public subsidies" (Schiefelbein 1986b, 42).

Private finance by indirect beneficiaries.

A third area for policy initiatives is to tap profit and non-profit organizations for additional contributions. Given that their interest may focus on certain educational activities their contribution could be better linked with special projects in non-formal education. As we discuss below, projects for entrepreneurial development are particularly suitable for the cooperation of business, political and religious organizations with different sectors of the government. The role of the government in this case could be to act as a catalytic agent of those contributions by providing the policy direction and organizational framework that would make cooperation among different groups and sectors possible.

Financing certain forms of training by special taxes to the industries and workers benefitting from those skills is also an option; there is experience in Latin America[17] with "an excellent hands-on vocational training system financed with taxes from the payrolls" (Schiefelbein 1986b,42).

8.2. Policies to influence educational management.

Of direct relevance to increasing the output of the educational system with reduced or stagnant financial inputs is better management of those resources. Two areas of action are management of the educational system, the administrative machinery, and management of instruction, actual instruction delivery systems. There is substantial research and experience that could inform policy decisions in both of these areas[18].

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[17] In most countries the percentage contributed by the private sector to this type of training far exceeds the contributions of the public sector: Argentina (COMET) 12.1%, Bolivia (FOMO) 1.9%, Brazil (SENAI) 100%, Colombia (SENA) 98.9%, Costa Rica (INA) 97.8%, Chile (INACAP) 2.8%, Ecuador (SECAP) 47.3%, Guatemala (INTECAP) 59.6%, Honduras (INFOP) 88.8%, Mexico (ARMO) 5.6%, Nicaragua (INA) -, Paraguay (SNPP) 100%, Peru (SENATI) 100%, Uruguay (UTU) -, Venezuela (INCE) 82% (Castro 1979, cited in Schiefelbein 1986b,44).

[18] The literature on delivery systems is quite extensive; see for instance summaries of studies on the education production function (Schiefelbein 1981 and Schiefelbein 1982); for literature on administrative reform see Hanson 1986 and McGinn and Street 1986.

The critical issues to implement policy changes that may improve educational management seem to be how to create the conditions by which the existing information, data and research become relevant in the decision making process and how to create the conditions that will allow the education ministries to learn from their own experience. A study of the Mexican ministry of education gives a good characterization of a common problem in Latin America:

> "The ability of the Secretaría de Educación to learn from year to year is limited by certain structural features. A serious problem is the lack of organizational memory. The Mexican political system is characterized by constant turnover, between and within 'sexenios' of high ranking officials. A good proportion of high officials in the Secretaría were appointed in the middle of the 'sexenio' and did not have previous experience in educational planning or management. The desire of each new government to leave their own mark, leads to structural reforms that make policy continuity difficult. Lack of evaluative information about the educational system makes accurate diagnosis impossible, with the consequent risk of duplication of past mistakes" (McGinn et al. 1983,266, our translation).

A similar conclusion is offered in a study of the reform efforts in Colombia and Venezuela in the 1960s and 1970s (Hanson 1986). The creation of the conditions that would allow administrative continuity seem to depend on a political commitment from the relevant actors composing the State, as illustrated by the Colombian experience (Hanson 1986). The desire of an incumbent president or party may provide the impulse to start a reform effort, but more important is the commitment of the political establishment to allow administrative continuity once that president or party leaves office.

Within the ministry of education an emphasis on program and project allocation would be desirable to facilitate planning and evaluation, although macro-planning optimization models are available. The scarce literature investigating the education budget process in Latin America confirms that program allocations are not used even when formally required (McGinn et al. 1983,263).

<u>Implementation of systems of educational management that will maximize the use of existing information about the educational system</u>.

The profile of the educational manager needs to move from traditional administration towards entrepreneurship and creative problem-solving. The proverbial problems of patronage and corruption need urgent corrective action since their cost to society will surely be larger in times of scarcity.

An option in developing a professional bureaucracy is to provide job security and administrative continuity that will allow the development of an 'organizational memory'.

Another option is to increase the administrative skills of educational administrators, so that they can do their job better; alternatively, the participation of existing technically competent people in the system could be promoted. The type of technical skills that are called for to resist a 'culture of cuts' may go beyond the traditional profile of the educational planner or manager. Skills in the traditional areas of planning need to be supplemented with skills in negotiation, communication, evaluation. The focus of skill development should be to produce planners and administrators who will be concerned with implementation rather than with plans or theoretical exercises. Implementation of educational change requires good planning, but requires more than that, it requires attention to clients, implementors, tasks, politics and the process in which decisions are made; furthermore effective implementation requires continued organizational intelligence about the continued change process as well as the institutionalization of those changes (Warwick, Reimers and McGinn 1989). Other options for reform discussed in this paper are geared to develop that kind of organizational intelligence.

A third option is to modernize information systems. Timely and accurate information flows are necessary for policy analysis that properly reflects the educational system's range of options and for appropriate implementation of policy choices. Such systems can partly benefit from computer hardware and software that enhances the capability of data processing and communications, but it is important to recognize that the technology is only part of a system where the human element is the principal component. Modern computer technology will result in modern information systems only if the information so processed becomes relevant to the decision making and implementation processes. This requires that the people at various levels in the system are both able and willing to interact with modern systems of information processing and transmission.

The importance of an up to date and efficient system of educational statistics is evident given that those statistics provide the indicators to monitor the working of the educational system and to assess the impact of policy changes. Nowadays the availability of low cost computer equipment makes it easier to establish management information systems which close the gap between the decision makers and the automated databases. This, together with the increase in computer processing speed and development of user-friendly educational planning software, makes it easier to incorporate an accurate knowledge base to the policy

dialogue exploring educational scenarios.

Another type of information useful for decision making is the assessment of the implementation of educational innovations in real life. This type of information broadens the scope of policy options to be considered by the planners and managers of the educational system and allows the system to learn from the experience gained in the implementation of those innovations or reforms. In Latin America there is an excellent network of information and documentation of educational research (REDUC). This network, coordinated by the Center for Research and Development of Education in Santiago (CIDE), includes 20 research centers in countries of Latin America and publishes the 'Resumenes Analiticos en Educacion' (Abstracts of Educational Research), a useful tool to facilitate access to research and documentation about educational innovations carried out in Latin America. Evaluations comparing REDUC with international databases (ERIC) conclude that REDUC is superior in several dimensions which make it more relevant for decision making in educational policies in Latin America (Reimers and Villegas 1984). The fact that national centers associated to this regional network already exist makes it relatively easy to develop and strengthen the links between the Ministries of Education and this live memory of the educational experience of Latin America.

Systematic use of innovation research, evaluation and planning.

Another option for administrative development would be to incorporate innovation research (to identify cost-effective systems), evaluation and rational planning as crucial ingredients of the decision-making process. There are new questions and issues for which solutions have to be invented. Among them: 1) what forms of community mobilization are feasible and functional in order to increase private contributions to education? Who can contribute, what and how can those contributions be brought forth?; 2) What forms of administration increase efficiency? 3) How can the cost-effectiveness of delivery systems be increased? What types of educational technologies would increase the level of output with the same or a lower level of input?

Increasing private contributions is an area where many innovative options could be explored. Their impact should be assessed not only in terms of the additional resources they bring in, but also in terms of their impact on external and internal efficiency. Some of the options that could be explored are: student participation in school maintenance and cleaning, already common in Japan (Visalberghi 1986, 248); community participation in school building and improvement; participation of the school in the production of goods and services; direct and specific taxation of industries who benefit from the training received by

those they employ[19].

Another area in great need of innovation is that of organizational arrangements that will help establish the "professional bureaucracy" and decision-making system of educators described above. Among the approaches to be examined could be the role of participatory decision making, or greatest two-way communication between teachers and planners at the central level[20]. I have argued earlier that the reform efforts to respond to the crisis must be systemic and not uni-dimensional. More efficient communication will help to preserve quality of education particularly if innovative policies in delivery systems are to be implemented. The climate of budget constraints (the "culture of cuts" described before) may be too receptive to innovations that will reduce unit costs to the detriment of the quality of the education delivered. Adequate feedback channels (from teachers to evaluators and planners, for instance) may facilitate correction of innovations with significant detrimental effects on quality. An example of this type of participatory approach to educational planning is the experiment of Los Santos in Costa Rica, the planners go to the communities and listen to their needs, involving them in the design of the curriculum. Preliminary reports of this experiment suggests that it has reduced dropout and repetition rates (Pinto 1989).

Although the constraints resulting from the adjustment are essentially financial, this does not mean that their solution is solely a matter for economists and planners at the central level. The option of reducing unit costs by increasing the intensity of use of facilities or teachers (larger schools, increased pupil:teacher ratios) (Williams 1986,233) or the use of teaching technologies minimizing labor costs (Orivel 1986,204) should be evaluated not only in terms of their cost savings potential but also in terms of the functions of schooling. If such a function is something different than providing a space for children for a certain number of years it may be important to evaluate the impact of the proposed changes on the performance of the school on those functions. Husén, for instance, has been very critical of the use of teaching machines or increases in school size to reduce costs, on the grounds that those innovations reduce the inter-personal contacts essential to the process of social education (Husén 1982,51).

Of course, the conservative alternative is equally harmful given the new economic realities. Assuming that "todo tiempo

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[19] For a research agenda on the financing of education see Schiefelbein 1983.

[20] For a research agenda on different forms of decentralized management see McGinn 1987.

pasado fué mejor" (old times were always better) in terms of educational quality would be wrong. The status quo in educational technologies has no special virtue aside from the fact that its limitations are known. But the fact that the apparent success in high gross enrollment ratios hides many stories of failure for many repeaters and dropouts, or even for many who graduate less than well equipped for productive jobs and fulfilling lives, should be an incentive to explore alternatives to traditional ways of teaching and organizing the schooling experience. Different curricula and approaches to teaching, different schedules, part time education, and work-study combinations are innovations that should be explored particularly to reach those who have been least served by traditional education.

Costs will surely play a role in the types of options to be explored and preferred. Innovations in teaching technologies and processes should be evaluated both in the context of the functions of education as well as in the context of a realistic recognition of the alternatives. Some innovative delivery systems based on self-study guides, peer teaching and teaching aides seem very attractive options (for a review of Project Impact, a major innovation of this type, see Cummings 1986).

8.3. Policies to influence educational outputs: Sharpening the links between education, work and productivity.

Among the issues of importance in the analysis of the Latin American debt crisis are the issues of employment and productivity. Increased unemployment results when the adjustment policies are designed to reduce internal demand[21]. In this sense addressing unemployment per se should become a driving force to refocus education programs. In addition, a partial alleviation of the crisis is expected from the development of export-oriented industries that would be competitive in world markets. This objective would fuel the need to train human resources to increase productivity in those industries.

Increased productivity and job creation are hence two positive driving forces to readjust the development of educational programs and levels. Reform in these areas is a necessary, albeit not sufficient[22] step to make the outputs of

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[21] This refers to goods with national value-added since reductions on demand of imported goods has implications for employment in the country producing the good, but not in the country consuming it.

[22] The reason it is not sufficient is that the optimization of the links between education-work-productivity requires reforms on both sides: education and production. If there is no demand for the services of graduates, either because the economy cannot absorb

the education system better fit the needs of the Latin American economies. The options to be considered include reforms to serve the modern sector of the economy as well as the traditional sector of the economy.

Education for productivity in the modern sector.

The modern sector, particularly the industries that need to develop comparative advantage by world standards, needs a labor force with the skills and attitudes to provide that competitive edge. Manpower planning methods could provide a sense of direction for levels and programs to improve the fit between educational background of graduates and job requirements of openings in the industrial sector (Davis 1980a,212). A potential risk in using manpower planning methods for this purpose is that major technological innovations (in the fields of information and genetics, for instance, or in new technologies which may emerge) are likely to transform the occupational structure of leading industries. For manpower forecasts, this means that the coefficients of workers by sector by job, and of the educational requirements for occupation by sector are unpredictable from past trends which reflect old technologies.

An option to overcome the risks implicit in manpower planning is to combine it with some heuristic approaches to plan development of the work force for leading industries and technologies and to plan at the subsystems (industry or region) level, or use plans as general indicative statements.

> "Against an uncertain future and over a wide domain and for a large workforce, manpower planning can only write very general requirements by projecting growth in employment by sectors of the economy, distributing this employment by occupations, and tracing education and training requirements from the occupational structure." (Davis 1980a,214).

All levels and types of education should be affected by this approach by redefining the numbers and abilities of graduates required at each level. The curricular implications at the basic levels include activities for work appreciation and pre-vocational development[23]. At the secondary and higher levels the implications are to develop different vocational programs and

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them or because labor markets are segmented, there is no chance for education to contribute to productivity (Davis 1980a,209). The discussion of potential corrective measures such as developing labor-intensive, rather than capital-intensive industries, is outside the scope of this thesis.

[23] Such as the experiments with the Escuela Nueva in Colombia and the schools in Los Santos in Costa Rica.

technical education, and to de-emphasize formalistic education whose main purpose is only to prepare graduates for the next level of education. The dilemma to be solved here is how to develop a curriculum that emphasizes practical skills while preparing for the type of higher level training necessary for development of high-technology industries. The equitable and efficient solution to this dilemma is some balancing act that may require more effort from students and teachers in order to give all graduates at basic levels needed practical skills for productive employment or self-employment, while giving all students the opportunity to acquire the knowledge to compete for further study at higher levels. The objective should be universal basic education of equal quality which provides both academic skills and appreciation of work as well as basic skills to find productive employment and develop within and between the worlds of education and work. Even though non-formal alternatives seem best suited for this type of entrepreneurial development, general aspects of entrepreneurship and vocational education could be included in the general curriculum at all levels. Programs of guidance counseling and information networks to link jobs and graduates can also be developed within the formal education sector. Non-formal and adult education are also important channels to increase the fit between education and productivity[24]. In particular entrepreneurial development training can serve small, highly technological firms in the modern sector of the economy; this seems particularly adequate for the fields of biotechnology, informatics and microelectronics. Industrial education on the job, or in evening or summer schools can improve the skills of workers in larger firms in the modern sector.

Education for productivity in the traditional sector.

The traditional sector needs to be addressed simply because of its relative size and flexibility which offer the potential to reduce unemployment[25].

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[24] The Universidad del Sur, in Colombia, is experimenting with a program of distance education to develop entrepreneurs at the level of 'tecnicos' (Ramon 1989).

[25] Figures on relative size of the traditional sector are difficult to obtain, official estimates of the traditional sector as a percentage of the urban workforce are 24 percent in Brazil (1972), 39 percent in Chile (1968), 50 percent in the Dominican Republic (1973), 48 percent in Ecuador (1970), 46 percent in El Salvador (1974), 27 percent in Mexico (1970), 57 percent in Paraguay (1973), 60 percent in Peru (1970) and 44 percent in Venezuela (1974) (Source PREALC, cited in Hallak and Caillods 1981,15).

Survey data of workers in the traditional sector suggest that this group has generally received less education than workers in the modern sector "as if, unable to find employment in the modern sector, the least-educated, the illiterates and school drop-outs had no alternative but to seek employment in the traditional sector" (Hallak and Caillods 1981,56); this could imply that the productivity in this sector could be improved by improving education provision.

Heuristic planning approaches, creativity and flexibility to collect relevant information and project planning techniques for later stages in the life of the projects (institutionalization) seem most suitable to this field.

The driving forces here for the development of educational programs are both to foster skills and attitudes that will add to productivity, but more importantly that will allow graduates to create their own jobs and to generate employment for others. Job creation and entrepreneurial development are as important as the specific skills for a trade or occupation in this sector[26]. Harper (1984) identifies three major components of entrepreneurial development programs: training in elementary techniques of business management, assistance with market analysis and funding proposal preparation and training "to think and act in an entrepreneurial way" (Harper 1984,82). The same author indicates that management training and technical skill training are not clearly differentiated in these programs (Harper 1984, 82). To the extent possible the areas of activity to be targeted for educational efforts would be those linked to the industries in the modern sector which would solve "most of the initial problems of the small scale enterprises [...] by developing complementarity between large and small firms and encouraging subcontracting" (Sen 1979,236).

There is no single systematic planning approach to plan this type of educational programs. Sen (1979) proposes a method (which he calls a variant of manpower planning) that projects the demand of entrepreneurs from projections of future business opportunities; the method combines systematic market analysis techniques with heuristics on social and political factors (Sen 1979,216-229).

In the current situation in Latin America a starting point

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[26] As noted earlier entrepreneurial development is also a need to develop small highly technological industries in the modern sector. A recent typology of entrepreneurial programs identifies six types of activities (from physical survival to small enterprises based on high entrepreneurial talent) that cover the traditional as well as the modern sectors of the economy (Davis 1988b).

could be to select a range of activities in the traditional sector in terms of some criteria, for instance in terms of their degree of linkage to the modern sector or to export earnings. Market analysis techniques may help target the most productive sectors. Heuristic approaches may also help to identify leading areas for activity of small and medium enterprises where high entrepreneurial talent is required. In Latin America it may be important to target not only the traditional urban sector but also the traditional rural sector of the economy (Schiefelbein 1979).

Once the activities to be developed have been identified, the next step may be to start up projects to provide skills and entrepreneurial development for those activities. Instruction for skill development can be designed on the basis of rationalization of production processes involved in each line. The emphasis in training should be on skill development rather than certification, following approaches such as the Modules of Employable Skills developed by the International Labor Organization to design vocational training on the basis of identifiable skill requirements for each job (Little 1986,16).

Organization of the project will be more difficult since there is no single organizational format; Davis (1988b) suggests planning linkages at different levels, from delivery units in the community to national and international agencies. The lack of a unique organizational format stems from the diversity of programs. A recent article identifies 15 dimensions in which entrepreneurial development programs can vary: objectives, technology and skill training needs, occupational training needs, leadership styles and motives, type of output of enterprises, size of industries, scale of production, etc. (Davis 1988a). The theory on the subject suggests that the best approach to this complexity of program definition is wide variability and adaptability in order to increase the likelihood of success of a given project:

> "It is precisely this enormous variability that makes the programs difficult to describe and work with, but very versatile, resistent to failure, if somewhat complex to design or even to describe in programmatic terms." (Davis 1988a,15).

It would seem that there are two approaches to start up these projects. One is to develop on a project level, close to the community to be served and to delivery units. This seems an adequate response for local communities, groups of businesses or community organizations. The second approach is to develop a national framework to coordinate efforts at the delivery unit level; the critical element is an integrated approach by linking resources from different sectors. This seems more appropriate for a national effort by public or private agencies. The following

two examples from India and Spain illustrate both approaches; whatever the level, current thinking on the topic emphasizes the need to build on existing projects rather than start from scratch (Davis 1988b, King 1983, Niehoff and Neff 1977).

The Calcutta Youth-Self Employment Center provided young people the skills to set up their own business. The areas of training initially selected included "air conditioning and refrigeration, cement products, plumbing, tire repair and recapping, spray painting, wood projects, welding, wiring, and electrical servicing (...) some of the first-generation selections were quite unsuccessful and were closed down or modified" (Davis 1980a, 237-238). Among the factors that seemed to have contributed to the success of the project are the flexibility to adapt and shift training to different areas, and the leadership, networks and resources volunteered by many organizers and instructors.

A more recent development in Spain illustrates that entrepreneurial development can serve the twin objectives of fostering national productivity and reducing unemployment. The Strategy for Productive Employment "is the result of an agreement among labor unions, the Government and entrepreneurs, and comprises three elements: training, information, and support." (Dominguez-Urosa 1986,2). The strategy was developed to serve job creation and entrepreneurial development in a wide range of fields of activity at the level of small and medium-sized enterprises. The training aspects of the strategy focus on technical and entrepreneurial skills provided by government institutes and private schools of business. An important conclusion of the report of this strategy is that the three elements (training, information and support) are necessary for the success of the initiative (Dominguez-Urosa 1986,5).

Education to foster productivity and entrepreneurship in the traditional sector of the economy seems an important policy response to the crisis, yet, judging from our analysis in the structure of educational expenditures, this type of non-formal education is more likely to suffer from the budget cuts since it is less institutionalized. A special effort could be made to seek out private contributions to this type of education (by mobilizing support from religious, political, business, military and other social organizations) but the administrative and professional effort necessary to catalyze private response will require significant contribution from the public sector. The success of project initiatives for entrepreneurial development depends on the integration of training with other components: information and continued assistance, credit schemes, and at some levels health and social security. This implies that funding for those projects exceeds the capacity and responsibilities of the Ministry of Education. It could involve the Ministries of Finance, Work, Development, Agriculture, Industry, Health and

Defense. The fact that education projects of this type require the collaboration of various sectors (within the government and in the society) is at the same time an advantage and a disadvantage. The disadvantage results from the special efforts of coordination among sectors which are needed, but the advantage results from the fact that each sector can claim credit for the total success of the enterprise to which they contribute only partially. The small scale of delivery units enables them to be spread out so as to maximize geographical coverage and political visibility for low intensity operations. This seems to be an area for collaboration among many potential winners (different government sectors, private sector, social organizations) and no clear losers.

9. Envoy.

The Latin American debt crisis will certainly have an impact in the economic, political and social spheres. Impact in each area will in turn feed back into the other spheres. In this sense the observed negative effect in education discussed in this study is likely to have a consequent negative impact on medium and long term economic, political and social development.

The challenge for those concerned with achieving a better future for the people of Latin America is how to oppose the negative short-term effects of the debt crisis. A major area of action is certainly the solution of the debt problem itself, but solutions in that domain may take long to show significant improvements. Direct action is also needed to protect sectors such as education from the adjustment process.

Quick-fix responses to the adjustment process will result in reduced efficiency and increased inequities in the delivery of education. The debt crisis provides a sense of urgency for major policy initiatives in order to preserve the contributions to economic, political and social development of education. The major challenge for the Latin American governments is to bring forth partnership and responsibility among different social groups so as to make the necessary policy changes politically feasible.

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